

VOLUME I

ROYAL RANGERS ADVENTURE CAMP AND CONFERENCE CENTER

DRAFT ENVIRONMENTAL IMPACT REPORT









PCR SERVICES CORPORATION





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ROYAL RANGERS ADVENTURE CAMP AND CONFERENCE CENTER

DRAFT ENVIRONMENTAL IMPACT REPORT

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EXECUTIVE SUMMARY

INTRODUCTION

In accordance with CEQA Guidelines §15123, this Chapter of the EIR provides a brief description of the project; identification of significant effects and proposed mitigation measures or alternatives that would reduce or avoid those effects; areas of controversy known to the lead agency; and issues to be resolved including the choice among alternatives and whether and how to mitigate the significant effects.

SUMMARY

The proposed project involves development of a year-round campground and conference center for a maximum of 1,048 youth and staff with a fort building, two amphitheaters, an outdoor chapel, swimming pools, archery range, gun range, rope apparatus courses, camping circles, bike and nature trails, recreational courts, and nature recreational areas on 50.31 acres in the Twin Peaks area. The project applicant, Royal Rangers, is a non-profit organization and is affiliated with the Assemblies of God Church.

Vehicular access onto the site would be provided via a gated entry from Highway 189. Secondary access would be provided along the project's northern frontage to the west of the main entrance from Highway 189. In addition, for emergency evacuation purposes, two unpaved access points exist along the project's southern boundary through U.S. Forest Service (USFS) property to Highway 18. The proposed project would provide approximately 491 parking spaces, which would meet and exceed the minimum code requirements.

The proposed project would result in the disturbance of approximately 33 acres (66 percent) of the project site (13.02 acres of building, parking lot, and grass parking lot coverage; 3.52 acres of tent camping/fire circles, gun and archery ranges, fort courtyard, rope courses, and mountain biking trails; 1.95 acres of temporary site disturbance during construction; and 14.54 acres of fuel modification zone). The remaining 17 acres (34 percent) of the site would be left as natural forest.

In accordance with the requirements of the Crest Forest Fire Protection District, a permanent 100-foot wide fuel modification zone would be placed around the perimeter of the project site to provide a firebreak and deter the spread of any potential forest fire. Removal of brush, plants, ground cover and trimming of tree branches from the ground to a height of 10 feet

would establish the fuel modifications zone. Plant materials that accumulate within this zone would be cleared regularly to maintain accumulation to a minimum in accordance with the requirements of the Crest Forest Fire Protection District.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

According to CEQA Guidelines §15123(b)(2), the Executive Summary of an EIR shall identify potential areas of controversy and issues to be resolved by the decision-makers. Generally, these include those areas where a significant unavoidable impact has been identified as well as issue areas where concerns have been raised, primarily through the Notice of Preparation process, indicating a level of controversy. For the Royal Rangers Adventure Camp and Conference Center project, a significant unavoidable impact would occur in the areas of aesthetics/visual quality, cumulative biological resources (impacts to the southern rubber boa), land use compatibility, cumulative noise, and a potential secondary construction noise effect associated with a proposed mitigation measure (Mitigation Measure MM-F4).

In addition, a number of comments have been received by the County, in response to the Notice of Preparation and comments received at the scoping meeting for the proposed project, raising issues concerning the provision of water supply (see Section 3.F., Hydrology, Water Quality, and Water Supply) and exacerbation of air quality (see Section 3.B., Air Quality), impacts to wildlife (see Section 3.C., Biological Resources), fire hazards and the use of the gun range (see Section 3.E, Hazards and Hazardous Materials), noise (see Section 3.H., Noise), and traffic (see Section 3.I., Transportation and Circulation) conditions in the project area. These constitute potential areas of controversy.

CLASSIFICATION OF ENVIRONMENTAL IMPACTS

Potential environmental impacts for the proposed project have been classified in the EIR in the following three categories:

- Less-Than-Significant Impact the project would result in impacts that are below the identified thresholds of significance;
- Potentially Significant Impact the project would result in significant adverse impacts that can be feasibly mitigated to less-than-significant levels; or
- Significant Unavoidable Impact the project would result in significant adverse impacts that cannot be feasibly mitigated to less-than-significant levels.

All environmental impacts identified as potentially significant (as identified in the County's Initial Study) are analyzed in Chapter 3.0 of this EIR. Those issues found not to be significant (as determined in the County's Initial Study) are listed in Chapter 5.0 of this EIR.

ALTERNATIVES

The CEQA Guidelines require an EIR to "describe the range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." The CEQA Guidelines direct that selection of alternatives be guided by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.

As described in detail in Chapter 4.0, Alternatives Analysis, of this Draft EIR, three alternatives to the project were identified, including a No Project Alternative, a Reduced Project Alternative, and an Alternative Site Design. Based on an analysis of these alternatives, an environmentally superior alternative is identified. The three identified alternatives, as well as the identified environmentally superior alternative, are summarized below. No Alternative Site was identified for the project since the project site has been deeded by the Assemblies of God to the Royal Rangers organization. Consequently, it would not be feasible for the Royal Rangers to acquire, control or otherwise pursue access to alternative site locations.

No Project Alternative: The No Project Alternative primarily assumes that no discretionary actions, which are subject to CEQA review, would occur within the project site. Under this primary assumption, the project would not be constructed, and the project site may remain as forested land.

However, in accordance with CEQA Guidelines Section 15126.6(e)(3)(B), the No Project Alternative may discuss "predictable actions by others, such as some other project if disapproval of the project under consideration were to occur." CEQA Guidelines Section 15126.6(e)(3)(C) further states that the No Project Alternative should project "what would reasonably be expected to occur in the foreseeable future if the project were not approved based on current plans and consistent with available infrastructure and community services." More specifically, should development occur, only those ministerial activities allowable under existing land use policies would be anticipated.

Therefore, the No Project Alternative also addresses the residential uses permitted under the existing land use designation. The RS-14M designation of the project site permits a density of one dwelling unit per 14,000 square feet. This would allow for a theoretical density of 155

dwelling units on the site. However, other requirements, such as reserving 40 percent of the site as open space, and the natural constraints of the site are expected to restrict the total number of dwelling units that would be feasible. As a result, the No Project Alternative analysis is based on a 1992 Planned Residential Development with 60 units that was proposed for the site and reviewed by the County. Though the plan was abandoned due to poor economic conditions at the time, it is viewed as feasible for purposes of analyzing a reasonably foreseeable project that could result if the proposed project were not approved.

Reduced Project Alternative: The Reduced Project Alternative would involve a reduction in the size of some of the larger components of the project, including the fort building, the amphitheaters, the pools, tent camp sites, and associated parking. Generally, the larger components of the project would be reduced by approximately 40 percent. In addition, the gun range is proposed to be enclosed under this alternative.

The primary purpose of this alternative is to reduce the massing created by the project and the magnitude of its environmental effects. This alternative would reduce the extent of site disturbance by approximately 5.5 acres due to a reduction in tent camp sites, pool size/capacity, and parking areas. Because the tent camp sites would not require any tree removal, the extent of tree removal would be reduced by approximately 5.2 acres as a result of the reduction in pool capacity and parking areas. It is estimated that there are approximately 6,750 trees six inches in diameter or larger, located on the project site. With the 5.2-acre reduction in site disturbance, the total number of trees estimated to be removed under this alternative would be 1,463 trees, which would be 702 fewer trees than the proposed project.

Alternative Site Design: The Alternative Site Design is intended in part to reduce the visual impacts of the proposed project by relocating project features, including the parking lots near the fort building and the cabins and structures along Highway 189, away from the roadway. This Alternative would also eliminate the fort building, the gun range, and the western-style amphitheater from the site plan. Elimination of the fort building would result in tent camping only on the project site and would allow the parking lots to be located in its place, reducing the massing created by the fort building and the parking lots and creating a larger setback between the roadway and the paved parking lots.

This alternative is estimated to reduce the extent of site disturbance by approximately 7.6 acres through elimination of the fort building, the gun range, the western-style amphitheater, and 116 spaces of parking. With the 7.6-acre reduction in site disturbance, the total number of trees to be removed under this alternative would be 1,139 trees, or 1,026 fewer trees than the proposed project.

Environmentally Superior Alternative: The Alternative Site Design would be the environmentally superior alternative. This alternative would reduce impacts on aesthetics, air quality, tree removal, impermeable surfaces, hazards and soil contamination associated with the gun range, water usage, noise, and transportation to a greater extent than the Reduced Project Alternative and the proposed project. The rest of the impacts would be similar to the proposed project.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-1 on page ES-6 presents a summary of the environmental impacts associated with the proposed project, the mitigation measures that would reduce or avoid those effects, and the level of significance of the impacts following implementation of the mitigation measures.

Table ES-1

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
A. AESTHETICS		
A-1: The proposed project would convert forested land to built uses, significantly affecting the site's aesthetic resources and, in turn, valued scenic views to the site from Highway 189 and hiking trails located on USFS property. This would be a significant impact.	MM-A1(a): To reduce the significant aesthetic impact along Highway 189 and the public hiking trails located near the northeastern portion of the project site, replacement trees that are at least 12 inches in diameter and endemic to the mountain region shall be planted along the western and southern boundaries of the project site to provide additional screening of proposed structures and parking lots from public views. MM-A1(b): Prior to issuance of grading permits, site plan review shall be conducted with special consideration of building and structure heights and setbacks, natural setback areas/buffer zones, and parking lot design and placement. Design requirements shall be established to address architectural treatment, retaining walls, colors, and materials to ensure that proposed structures blend in with the natural environment to the maximum extent feasible. The landscape plan for the project shall also be reviewed relative to tree preservation efforts and opportunities to provide replacement trees and plant materials that are endemic to the mountain region to help screen parking areas and the fort building from motorists along Highway 189.	Significant unavoidable.
A-2: The proposed project would introduce new sources of light and glare on the project site but would not generate sources of light and glare that would significantly affect sensitive receptors. This is a less-than-significant impact.	No mitigation measures required.	Less than significant.

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
B. AIR QUALITY		
B-1: Daily construction emissions for NO _x and ROC are expected to exceed SCAQMD daily	MM-B1(a): Total daily heavy equipment use shall not exceed an aggregate of 52 hours.	Less than significant.
significance thresholds. This is a potentially significant impact.	MM-B1(b): Heavy equipment shall not be left idling except when engaged in active construction.	
	MM-B1(c): The construction supervisor shall keep on-site records of heavy equipment-use for County review.	
	MM-B1(d): All primers shall contain less than 0.85 pound per gallon (102 gram/liter) VOC.	
	MM-B1(e): All paint top coats shall contain less than 0.07 pound per gallon (8 gram/liter) VOC.	
	MM-B1(f): Heavy equipment operations shall not occur simultaneously with the application of paints and coatings.	
B-2: Construction emissions for toxic air contaminants are not expected to exceed SCAQMD daily significance thresholds. Therefore, this is considered a less-than-significant impact.	No mitigation measures required.	Less than significant.
B-3: Construction emissions for odors are not expected to exceed SCAQMD daily significance thresholds. Therefore, this is considered a lessthan-significant impact.	No mitigation measures required.	Less than significant.
B-4. Project operational emissions associated with vehicular traffic, wood stoves, open fires and other stationary sources would not exceed SCAQMD daily significance thresholds. This is a less-thansignificant impact.	No mitigation measures required.	Less than significant.

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
B-5: Daily vehicle emissions for CO are not expected to exceed SCAQMD daily significance thresholds at any intersection. This is considered less-than-significant impact.	No mitigation measures required.	Less than significant.
B-6: The project is located in an area subject to exceedance of applicable O ₃ standards. Camp occupants of a young age may be susceptible to health effects during smog alerts and periods of high pollutant concentrations if they are engaged in strenuous physical activities. This is considered a potentially significant impact.	MM-B6(a): The camp supervisor(s) shall avoid or reduce to the maximum extent feasible strenuous physical activities (e.g. basketball, field hockey, volleyball and mountain biking) during summer and fall afternoons in the peak ozone periods (i.e., between 2:00 P.M. and 5:00 P.M.) for all campers. MM-B6(b): The camp supervisor(s) shall consult published SCAQMD forecasts (1-800-CUT-SMOG or http://ozone.aqmd.gov/smot/forecast.html; SRA Monitoring Station 37 Central San Bernardino Mountains) in the summer and fall when camp is in session in order to prohibit strenuous physically activities (e.g. basketball, field hockey, volleyball and mountain biking) during local smog alert days.	Less than significant.
B-7: Emissions of air toxics during project operations are not expected to exceed SCAQMD daily significance thresholds. Therefore, this is considered a less-than-significant impact.	No mitigation measures required.	Less than significant.
B-8: Emissions of odors during project operations are not expected to exceed SCAQMD daily significance thresholds as the project does not include uses associated with odor complaints. Therefore, no impact would occur.	No mitigation measures required.	Less than significant.
C. BIOLOGICAL RESOURCES		
C-1: The proposed project would result in the direct removal of common plant communities and plant species from the project site. Impacts to plant	No mitigation measures required.	Less than significant.

County of San Bernardino Land Use Services Department Royal Rangers Adventure Campground and Conference Center

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
communities and species are considered to be less-than-significant impacts.		
C-2: The proposed project would result in the direct removal of wildlife habitat from the project site. Impacts to wildlife species and wildlife movement are considered to be less-thansignificant impacts.	No mitigation measures required.	Less than significant.
C-3: Project construction may impact the southern rubber boa, which may be present on-site. This is considered a potentially significant impact.	MM-C3: Off-site mitigation for impacts to suitable habitat for the southern rubber boa shall be estimated at a ratio of 3:1 in accordance with the CDFG letter dated April 4, 2002 provided in Appendix C. The impacted areas shall be determined upon completion of a subsequent habitat delineation by a registered biologist approved by the County, CDFG, and USFS to establish the total areas of off-site mitigation. USFS representatives shall be consulted and mitigation is likely to consist of the acquisition of private property. This would include the identification of suitable habitat within the forest for acquisition and dedication as open space. A biological monitor shall be present during the removal of the rock piles to monitor and relocate any rubber boas found. No construction within areas of the site with habitat suitable for the southern rubber boa shall occur until an off-site mitigation plan has been formalized and approved to the satisfaction of the County, CDFG and the USFS.	Cumulatively significant unavoidable.
C-4: Project construction would directly impact CDFG jurisdictional streams. This is considered a significant impact.	MM-C4: The proposed impacts to State-regulated waters as a result of the proposed project will be subject to the regulations set forth by the CDFG. Any alteration to the drainages will require a	Less than significant.

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	Section 1603 Streambed Alteration Agreement. An evaluation of mitigation alternatives shall include consideration of avoidance and/or on-site mitigation within the open space area located in the northeast portion of the project site. The CDFG shall require the project proponent to explore alternatives to reduce impacts and shall also require mitigation for all unavoidable impacts. This is anticipated to include on- or off-site replacement, or in lieu compensation, of CDFG jurisdictional streambed and associated riparian habitat at a ratio no less than 1:1. No construction on the site shall occur until mitigation for jurisdictional areas has been formalized, approved, or implemented to the satisfaction of CDFG such that impacts are reduced to a less-than-significant level.	
D. GEOLOGY AND SOILS		
D-1: The project site would be exposed to strong seismic ground shaking. This is considered a less-than-significant impact with conformance to the Uniform Building Code and the project geotechnical report.	No mitigation measures required.	Less than significant.
D-2: Liquefaction potential on the project site is very low. Therefore, hazards associated with liquefaction are considered a less-than-significant impact.	No mitigation measures required.	Less than significant.
D-3: Slope failures and debris flows may potentially affect the proposed structures, particularly the fort building and the large amphitheater, and camp sites. This is considered a significant impact.	Prior to issuance of grading or building permits, the following mitigation measures shall be expanded and revised as necessary to support an equivalent or greater level of environmental protection based on a design-level geotechnical investigation	Less than significant.

County of San Bernardino Land Use Services Department Royal Rangers Adventure Campground and Conference Center

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Table ES-1 (Continued)

Level of Significance After Mitigation			E o	و. و	Less than significant.	or n
Mitigation Measures	completed to the satisfaction of the County Building and Safety Division:	MM-D3(a): Debris berms and/or basins shall be constructed to protect improvements below debris source areas, including the steeper canyons northwest of the Fort Structure and slopes above the 1,000-seat amphitheater near the gun range.	MM-D3(b): All manufactured slopes shall be designed at 2:1 (horizontal to vertical) or flatter. In order to achieve good compaction at the slope face, fill slopes shall be overfilled a minimum of three feet and then cut back to compacted materials. After cutting back, the final slope shall be rolled with compaction equipment where determined necessary by the geotechnical engineer.	MM-D3(c): All design cut slopes shall be mapped in detail during excavation to confirm that adverse geologic conditions that could result in poor stability are not present on the slopes.	Prior to issuance of grading or building permits, the following mitigation measures shall be expanded and revised as necessary to support an equivalent or greater level of environmental protection based on a design-level geotechnical investigation completed to the satisfaction of the County Building and Safety Division:	MM-D4(a): Overexcavation of compressible surficial soils shall be required during grading prior to placement of fill or construction of structural foundation in these soils. The actual depth and extent of required removals shall be determined in
Environmental Impacts					D-4: Collapsible and settle-prone soils exist on the project site that could affect the integrity of proposed structures. This is considered a potentially significant impact on the proposed structures.	

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	the field during grading and construction based upon field observations.	
	MM-D4(b): Loose compressible soils shall be removed until firm native soil or bedrock is encountered. Removal operations shall be required in the vicinity of structural improvements where construction with shallow foundations are planned or in areas designed with significant fill embankments.	
D-5: Excavation of bedrock or oversized materials could affect geological and soil conditions on the site. This is considered a less-than-significant impact.	No mitigation measures required.	Less than significant.
D-6: The project area is not prone to subsidence. As such, subsidence would have no impact on project development.	No mitigation measures required.	Less than significant.
D-7: On-site soils are not classified as expansive. As such, expansive soils would have no impact on project development.	No mitigation measures required.	Less than significant.
D-8: No septic tanks are proposed as part of the project. As such, no impacts would result from such uses.	No mitigation measures required.	Less than significant.
E. HAZARDS AND HAZARDOUS MATERIALS	50	
E-1: Operation of the gun range and the archery range could pose a potential hazard to users and campers within the immediate vicinity of the ranges. This is considered a less-than-significant impact.	No mitigation measures required.	Less than significant.
E-2: Because the project site is located in a high fire hazard area, the proposed project would be	No mitigation measures required.	Less than significant.

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
subject to a high risk of exposure to fire incidents. However, this would be considered a less-thansignificant impact.		
E-3: Operation of the gun range may result in soil contamination associated with the use of lead	MM-E3: The proposed gun range shall incorporate EPA's recommended <i>Best</i>	Less than significant.
pellets/bullets. This would be considered a significant impact.	Management Practices for Lead at Outdoor Shooting Ranges into its Safety Plan. Prior to	
	operation of the gun range, the Safety Plan shall be subject to review and approval by the USFS, San Bernardino County Sheriff's Office, and Crest	
	Forest Fire Protection District. The Plan shall incorporate, but not be limited to, the following requirements:	
	• Spent projectile shall be periodically collected from traps and recovered (e.g., sifted) from impact areas. The frequency of collection shall be dependent upon the level of range activity.	
	 Workers conducting lead collection activities shall be properly trained in lead abatement hazards and procedures. 	
	• Gun range wastes shall be segregated to facilitate reclamation or recycling.	
	• Containers used to accumulate spent projectiles and cartridges to be recycled or reclaimed shall have covers and be labeled to identify contents and intended disposition (i.e., Spent Bullets to be Reclaimed).	
	 Used gun cleaning solvents and oily and dirty rags shall be properly handled and stored. 	

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
F. HYDROLOGY, WATER QUALITY, AND WA	WATER SUPPLY	
F-1: Construction activities and ground disturbance associated with project development may impact surface water flow. This would be considered less than significant.	No mitigation measures required.	Less than significant.
F-2: Construction of the project could temporarily increase pollutant concentrations in surface water. This would be considered less than significant.	No mitigation measures required.	Less than significant.
F-3: Project operations could increase pollutant concentrations in surface water. This would be considered less than significant.	No mitigation measures required.	Less than significant.
F-4: The proposed project would generate new demand for water that would be within the demand forecasts considered in the CUWD UWMP. While adequate water supplies would be available to serve the proposed project based on the UWMP, the existing water storage capacity would not be sufficient to serve the project. Therefore, impacts to water storage are considered to be significant.	MM-F4: To address the project's need for water storage, the applicant shall pay a fair-share cost to the CVWD for construction of an approximately 750,000-gallon water storage tank and a connection pipeline. The water storage tank would serve the site as well as future water storage needs within CVWD's Pinecrest Pressure Zone. The water storage tank shall be located next to CVWD's existing 254,000-gallon water storage tank immediately adjacent to the project site and east of the proposed fort building. No occupancy of the site as a campground shall occur until these improvements are put in place by CVWD and are operational to the satisfaction of the Crest Forest Fire Protection District.	Less than significant.
G. LAND USE G-1: The project would have significant unavoidable impacts to aesthetics and noise. These effects represent a potential land use conflict	See Mitigation Measures MM-A1(a), MM-A1(b), MM-H1(a), MM-H1(b), MM-H1(c), MM-H3(a), MM-H3(b), MM-H4(a) and MM-H4(b).	Significant unavoidable.

County of San Bernardino Land Use Services Department Royal Rangers Adventure Campground and Conference Center

Table ES-1 (Continued)

Environmental Impacts	Witigation Measures	Level of Sjonificance After Witigation
between the project and surrounding uses. This is considered a potentially significant impact.		
G-2: The project would conflict with a proposed wildlife corridor and relevant policies designed to protect the character of the area and provide a harmonious arrangement of land uses. Although the conflict with the wildlife corridor designation is considered less than significant, the project effects on the character of the area and land use compatibility are considered a potentially significant impact.	See Mitigation Measures MM-A1(a), MM-A1(b), MM-H1(a), MM-H1(b), MM-H1(c), MM-H3(a), MM-H3(b), MM-H4(a) and MM-H4(b).	Significant unavoidable.
H. NOISE		
H-1: Daily construction noise levels are expected to substantially exceed ambient noise levels. This is a short-term significant impact.	MM-H1(a): The construction contractor shall place all stationary construction equipment as far as feasible from near-site residential receptors, situated so that emitted noise is directed away from the receptors located to the south and east of the project site. MM-H1(b): The construction contractor shall locate equipment staging areas in the central portion of the site to create the greatest distance between construction-related noise sources and sensitive receptors during all project site preparation, grading, and construction activities. MM-H1(c): The construction contractor shall provide a construction schedule to nearby residents prior to commencement of construction and designate a construction relations officer to serve as liaison with residents.	Less than significant.
H-2: Operation of the proposed project would generate traffic volumes to and from the project	MM-H2: No mitigation measures required.	Less than significant.

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
site, which would, in turn, generate an increase in roadway noise. This increase is not anticipated to exceed the noise threshold. This is a less-thansignificant impact.		
H-3: Operation of the gun range would cause noise levels to exceed standards at sensitive receptor sites in the vicinity of the project. This is a significant impact.	MM-H3(a): Upon completion of the firing range, and prior to public use, the applicant shall perform noise monitoring for live firing operations following consultation with the County regarding methodology. These operations are to include ten shooters engaged in typical firing operations using equipment expected to be typical of that used by the campers. Noise levels are to be obtained at all off-site residential land uses located within 3,000 feet of the range. Firing operations are to occur for a period of no less than 15 minutes for any monitoring location. Noise parameters to be measured are those specified in the County of San Bernardino Noise Element, including the values that are exceeded 30 minutes, 15 minutes, five minutes, and one minute in any one hour (i.e., L ₂₀ , L ₂₅ , L ₀₈ , and L ₀₂). The maximum and minimum values (L _{max} and L _{min}) shall also be recorded. (Note that these values may be extrapolated from any readings that are less than one-hour's duration.) The findings of the noise monitoring shall be incorporated into a report for County review and approval. If all values are found to be within County standards, no further mitigation is warranted.	Less than significant.
	operations exceeds 45 dBA L _{eq} or the County standards at one or more residences, the applicant	
	shall either modify the range and/or place	

Table ES-1 (Continued)

Level of Significance After Mitigation	r type noise. ant ne range udards ge proved adards ater te ment be tative ated ated and and and a and and and a and and a and a and hour and than than than than the range and a ated are a and a a and a and a and a a and a
Mitigation Measures	restrictions on the number of shooters and/or type of allowable weapons to further reduce this noise. Subsequent to such modifications, the applicant shall conduct further noise monitoring, as described above. This shall continue until the applicant can conclusively demonstrate that range operations will not exceed either County standards or a Leaq of 45 dBA. No public use of the range may occur until a report is submitted and approved by the County that demonstrates that the standards have been attained at all off-site residential units. MM-H4(a): Prior to the approved methodology, during a "test-case" amphitheater operation, the applicant shall perform noise monitoring, based on county-approved methodology, during a "test-case" amphitheater event. The amphitheaters shall be in complete form with all proposed public address equipment functioning as intended. Noise levels are to be obtained for each amphitheater at a representative sampling of off-site residential land uses located within approximately 1,500 feet of each amphitheater. Noise parameters to be measured are those specified in the County of San Bernardino Noise Element, including the Leq and the values that are exceeded 30 minutes, 15 minutes, 5 minutes, and 1 minute in any hour (i.e., L ₅₀ , L ₂₅ , L ₀₈ , and L ₀₂). The maximum and minimum values (L _{max} and L _{min}) shall also be extrapolated from any readings that are less than 1-hour's duration.) The findings of the noise monitoring shall be incorporated into a report for
Environmental Impacts	H-4: Nearby cabins and certain residential properties in the Strawberry Flat area would experience increases in ambient noise that exceed County standards. This is a significant impact.

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
	within County standards, no further mitigation is warranted.	
	MM-H 4(b): If the noise associated with amphitheater operations exceeds 45 dBA L _{eq} or the County standards at one or more residences, the applicant shall either modify the amphitheater(s) sound amplification system and/or place restrictions on theater use (e.g., amplification levels, occupancy, duration, time). Subsequent to such modifications, the applicant shall conduct further noise monitoring, as described above. This shall continue until a report is submitted and approved by the County that demonstrates that amphitheater operations will not exceed either County standards or an L _{eq} of 45 dBA.	
H-5: Outdoor recreational activities associated with a swimming pool area, basketball and volleyball courts, field hockey, and other activities would generate noise that could exceed noise standards. This is a less-than-significant impact.	No mitigation measures required.	Less than significant.
H-6. Combined noise levels from the gun range, amphitheaters, and recreational activities would exceed noise standards for residential receptors adjacent to the site and in the Strawberry Flat area. This is a significant impact.	See Mitigation Measures MM-H3(a), MM-H3(b), MM-H4(a) and MM-H4(b) above.	Less than significant.
H-7. Cumulative noise from activities at the project site with concurrent operation of the Pinecrest Amphitheater would exceed noise standards for residential receptors adjacent to the site and in the Strawberry Flat area. This is considered a cumulatively significant impact.	See Mitigation Measures MM-H3(a), MM-H3(b), MM-H4(a) and MM-H4(b) above.	Cumulatively significant unavoidable.

Table ES-1 (Continued)

Environmental Impacts	Mitigation Measures	Level of Significance After Mitigation
I. TRANSPORTATION AND CIRCULATION		
I-1: The proposed project would exacerbate the	MM-II: Traffic signals shall be installed at the	Less than significant.
deficient conditions of several study intersections.	four study area intersections that were determined	
This would result in significant impacts on those	to be deficient per the County of San	
intersections.	Bernardino/Caltrans criteria. In order to implement	
	this mitigation measure, the project shall contribute	
	towards the cost on a fair-share or "pro-rata" basis.	

SCH No. 2002061035 Draft EIR – November 2003

County of San Bernardino Land Use Services Department Royal Rangers Adventure Campground and Conference Center

1.0 INTRODUCTION

1. PURPOSE AND OVERVIEW OF THE EIR PROCESS

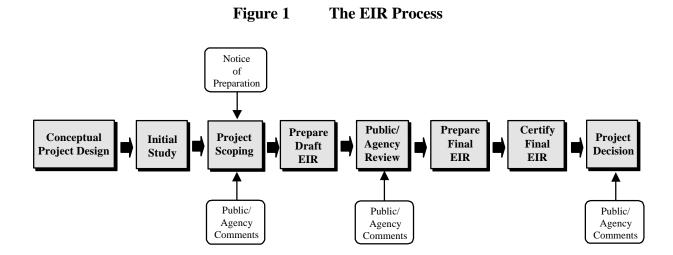
The purpose of this Draft Environmental Impact Report (EIR) for the proposed Royal Rangers Adventure Campground and Conference Center is to inform public agency decision-makers and the public of the potentially significant environmental effects of the project, and how those effects can be reduced or avoided through mitigation measures or project alternatives. This required pursuant to the California Environmental Quality Act (State CEQA Guidelines) and the County of San Bernardino CEQA Guidelines (County CEQA Guidelines). The Lead Agency for the project is the County of San Bernardino Land Use Services Department.

This Draft EIR provides objective and authoritative planning information in a logical format to assist County of San Bernardino (County) staff, the County's Planning Commission, the County Board of Supervisors and the general public in considering the environmental consequences associated with the proposed project. When certified, the Final EIR will be used by the County (in its capacity as Lead Agency) and other Responsible and Trustee Agencies, as defined by CEQA, to evaluate the environmental effects of the proposed discretionary actions and approvals necessary to implement and operate the proposed project.

This Draft EIR is being circulated to the public and affected agencies for review and comment as required by CEQA in order to facilitate public participation in the planning process. Public involvement is an essential feature of CEQA and interested parties are encouraged to participate in the environmental review process, request to be notified, monitor newspapers for formal announcements, and submit substantive comments at every possible opportunity afforded by the agency. The environmental review process provides opportunities for the public to participate through scoping, public notice and public review of CEQA documents, and public hearings (see Figure 1 on page 2). Additionally, lead agencies are required to consider comments from the scoping process in the preparation of the Draft EIR and to respond to public comments in a Final EIR.

The EIR process is guided by a somewhat complex set of laws and guidelines. As shown in Figure 1 below, the EIR process begins by determining whether or not the project is subject to environmental review. The second phase involves preparation of an Initial Study to determine whether the project may have a significant environmental effect. If it is determined that the project could result in significant environmental effects, the topical issues (i.e. Traffic, Noise, Air Quality, etc.) that contribute to these effects are identified in an Initial Study and are addressed in either a Mitigated Negative Declaration or an EIR. The Initial Study prepared by the County for

the proposed Royal Rangers Adventure Camp and Conference Center determined that the project would require the preparation of an EIR. The current status of the EIR process is at the public/agency review period for the Draft EIR. The next phase in the process will involve preparation of responses to comments received on the Draft EIR, and completion of any necessary revisions to the Draft EIR. The responses to comments and any revisions to the Draft EIR will be incorporated into a Final EIR. The Final EIR will be considered for certification by the County Board of Supervisors before a decision is made on the project. A diagram illustrating the CEQA process is shown in Figure 1.



2. SCOPE OF THE EIR

This section provides a summary of the issues addressed in this EIR. This Draft EIR was prepared following input from the public, responsible agencies, and affected agencies through the EIR scoping process. The "scoping" of the EIR was conducted utilizing several of the tools available under CEQA. In accordance with Section 15063 of the State CEQA Guidelines, an Initial Study, along with a Notice of Preparation (NOP), was prepared and distributed to responsible agencies, affected agencies, and other interested parties on June 5, 2002. The NOP was posted in the County Clerk's office for 30 days. The NOP is a required document that must be submitted to the State Clearinghouse to officially solicit participation in determining the scope of the EIR. Information requested and input provided regarding the scope of the EIR are included in this Draft EIR. A public scoping meeting was also held on June 26, 2002 at the Mountain Communities Senior Citizens Center in Twin Peaks to gather input from the local communities regarding the scope of the EIR. A copy of the Initial Study and NOP, responses to the NOP, and a summary of comments received during the scoping meeting are provided in Appendix A.

The content of this EIR was established based on the findings in the Initial Study and public and agency input received during the scoping process. Under CEQA, the analysis in the EIR is focused on issues determined in the Initial Study to be potentially significant, whereas issues found in the Initial Study to have less than significant impacts or no impact do not require further evaluation. Based on the analysis contained in the Initial Study, this EIR analyzes in detail the following environmental issues:

- Aesthetics
 Hazards and Hazardous Materials
 Public Services
- Air Quality
 Hydrology and Water Quality
 Traffic
- Biological Resources
 Land Use and Planning
 Utilities and Service Systems
- Geology/SoilsNoise

Chapter 3.0 is divided into sections for each of the issues listed above and includes a detailed discussion of the impacts. Mitigation measures to reduce impacts to a less than significant level are proposed whenever possible.

In addition to the environmental issues identified above, the EIR also includes all of the sections required by CEQA. Table 1 below contains a list of sections required under CEQA, along with a reference to the section in this EIR where these items can be found.

Table 1

REQUIRED EIR CONTENTS

Requirement/CEQA Section	Location in EIR	
Table of Contents (Section 15122)	Table of Contents	
Summary (Section 15123)	Executive Summary	
Project Description (Section 15124)	Chapter 2.0	
Environmental Setting (Section 15125) and Significant Environmental Impacts (Section 15126.2)	Sections 3.A-3.I	
Unavoidable Significant Environmental Impacts (Section 15126.2)	Chapter 5.0	
Mitigation Measures (Section 15126.4)	Sections 3.A-3.I	
Cumulative Impacts (Section 15130)	Sections 3.A-3.I	
Alternatives to the Proposed Project (Section 15126.6)	Chapter 4.0	
Growth-Inducing Impacts (Section 15126.2)	Chapter 5.0	
Effects Found Not to be Significant (Section 15128)	Chapter 5.0	
Organizations and Persons Consulted (Section 15129)	Chapter 7.0	
List of Preparers (Section 15129)	Chapter 7.0	

3. EIR ORGANIZATION

The content and format of this Draft EIR are designed to meet the current requirements of CEQA and the State CEQA Guidelines. The EIR is organized into the following chapters so the reader can easily obtain information about the project and its specific issues:

- "Executive Summary," presents a summary of the proposed project and alternatives, potential impacts and mitigation measures, and impact conclusions regarding significant unavoidable adverse impacts and effects not found to be significant.
- **Chapter 1.0, "Introduction,"** describes the purpose and use of the EIR, provides a brief overview of the proposed project, and outlines the organization of the EIR.
- Chapter 2.0, "Project Description," describes the project location, project details and the City's overall objectives for the proposed project.
- Chapter 3.0, "Environmental Setting and Environmental Analysis," describes for each environmental issue, the existing conditions or setting before project implementation; methods and assumptions used in impact analysis; thresholds of significance; impacts that would result from the proposed project; and applicable mitigation measures that would eliminate or reduce significant impacts.
- Chapter 4.0, "Alternatives Analysis," evaluates the environmental effects of project alternatives, including the No Project Alternative. It also identifies the environmentally superior project.
- Chapter 5.0, "Other CEQA Considerations," includes a discussion of issues required by CEQA that are not covered in other chapters. This includes unavoidable adverse impacts, impacts found not be significant, irreversible environmental changes, and growth inducing impacts.
- Chapter 6.0, "References," identifies the documents (printed references) and individuals (personal communications) consulted in preparing this EIR. This chapter includes the organizations and persons consulted to ascertain supporting information to support the EIR analysis.
- Chapter 7.0, "Organizations/Persons Consulted and List of Preparers," lists the individuals involved in preparing this EIR and organizations and persons consulted.
- Appendices, present data supporting the analysis or contents of this Draft EIR.
 Additional documents referenced in this EIR are available at the County office at 385

North Arrowhead Avenue (First Floor), San Bernardino, California. The appendices include the following:

- Appendix A: Notice of Preparation, Initial Study, and Comment Letters
- Appendix B: Air Quality Technical Reports
- Appendix C: Biological Resources
- Appendix D: Geotechnical Report
- Appendix E: Hydrology and Water Use Analysis
- Appendix F: Noise Technical Reports
- Appendix G: Traffic Study

4. AVAILABILITY OF THE DRAFT EIR

The Draft EIR for the Royal Rangers Adventure Campground and Conference Center is being distributed directly to numerous agencies, organizations, and interested groups and persons for comment during the formal review period for the Draft EIR. The Draft EIR is also available for review at the following locations:

- San Bernardino County Office at 385 North Arrowhead Avenue (First Floor), San Bernardino, California.
- San Bernardino County, Twin Peaks Office at 26010 State Highway 189, Twin Peaks, California.

The County will receive public input on the project and EIR at a hearing before making a recommendation to the Board of Supervisors. Comments from the community and interested parties, are encouraged at all public hearings before the Planning Commission and the Board of Supervisors. Information concerning the public review schedule for the EIR and public meetings can be obtained by contacting the County. Upon completion of the formal public review period, written responses to all comments on environmental issues discussed in the Draft EIR will be prepared and incorporated into the Final EIR.

5. EIR PREPARATION

This EIR has been prepared by PCR Services Corporation under contract to the County. The Draft EIR has been prepared for the County in accordance with CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR], Section 15000 et seq.). Staff members from the County and PCR Services Corporation who assisted in the preparation of this EIR are identified in Chapter 7.0, List of Preparers.

2.0 PROJECT DESCRIPTION

1. PROJECT LOCATION

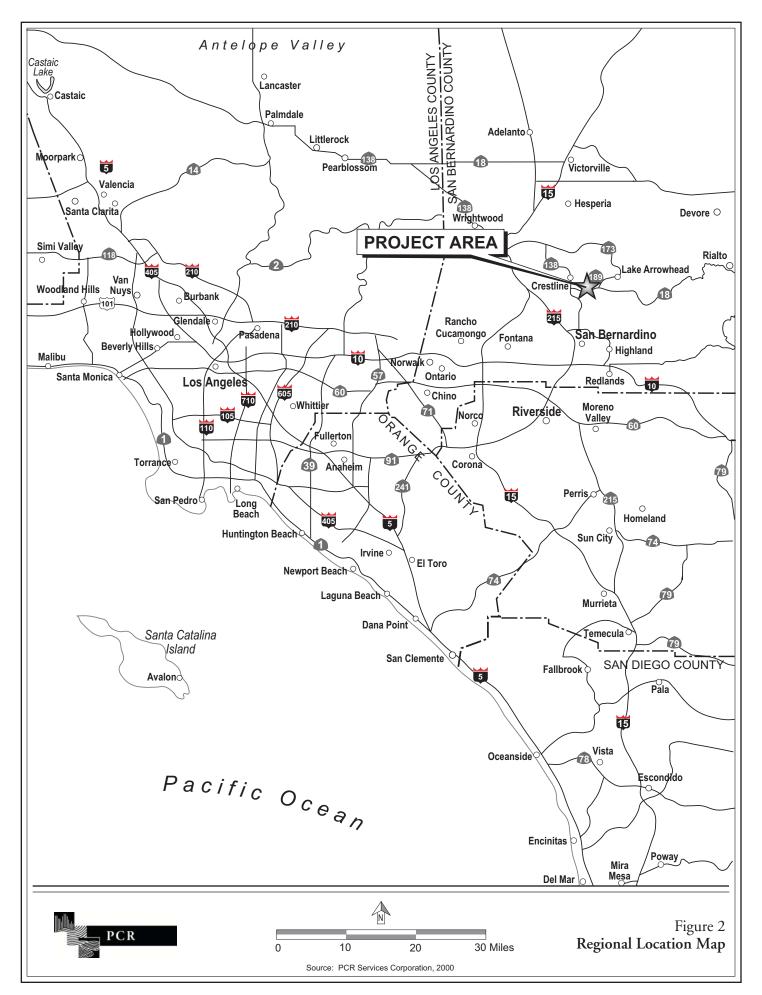
The proposed campground site is a 50.31-acre "butterfly"-shaped parcel of land located within the Twin Peaks area of the San Bernardino County National Forest on the east side of State Highway 189 at Pinecrest Road and north of Highway 18 (Rim of the World Highway). The location of the project site in a regional context is shown in Figure 2 on page 7. In a local context, the project site lies at the western flank of Strawberry Peak and a ridge in Section 25, Township 2 North, Range 4 West, and in Section 30, Township 2 North, Range 3 West on the Harrison Mountain Quadrangle, as shown in Figure 3 on page 8.

The project site is largely undeveloped and covered by montane coniferous forest with the exception of several unpaved fire roads which cross the central and southern portions of the site. Main access to the project site would be provided via Highway 189 across from Pinecrest Road. Secondary emergency access would be provided at four locations, one along the project site's northern frontage to the west of the main entrance and adjacent to Highway 189 and three along the project site's southern boundary through the U.S. Forest Service (USFS) property to Highway 18. Elevations across the project site vary from approximately 5,800 feet in the northeast portion of the site just below Strawberry Peak to approximately 5,250 feet adjacent to Highway 189 in the southwest portion of the project site. The project site is bordered by undeveloped property to the north, undeveloped property and Highway 18 to the south and east, and Highway 189 and the Pinecrest Christian Conference Center to the west.

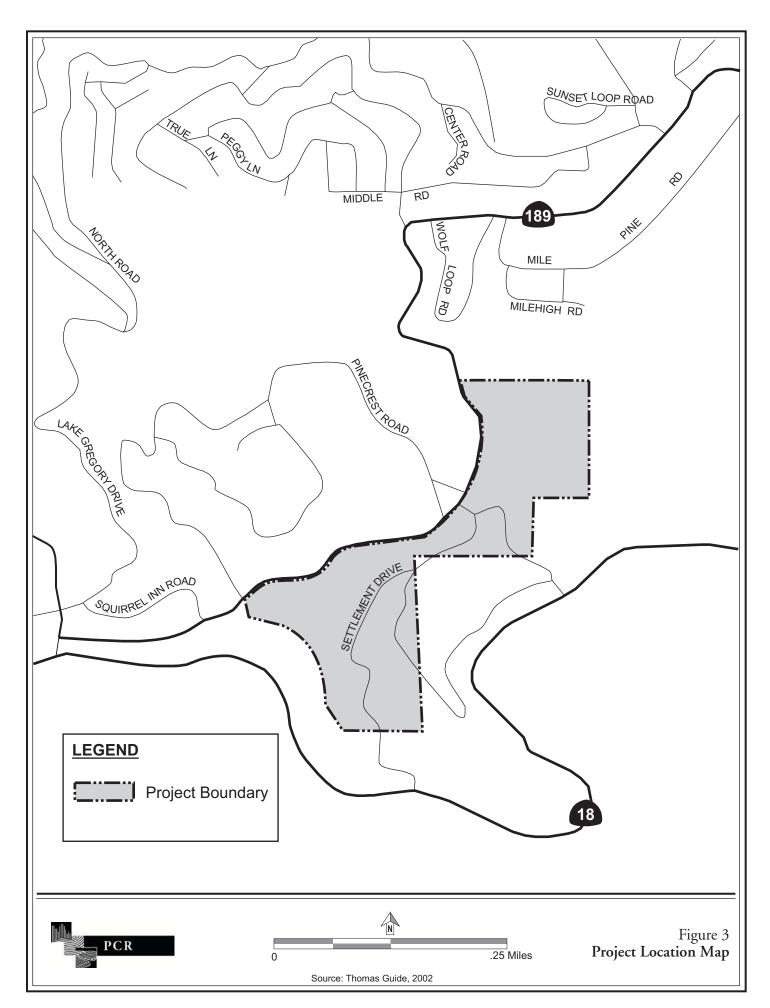
2. PROJECT OBJECTIVES

The Assemblies of God, a Christian organization, sponsors the Royal Rangers program for boys between the ages of five and 18. The intent of the program is to provide opportunities for youth to be introduced to church, community and nature-related activities through interaction with qualified leaders and scouting experiences. The program is similar in structure to the Cub Scouts and Boy Scouts of America, with different levels of life skill activities and achievements for different age groups.

Two important aspects of the Royal Rangers activities are camping and outdoor skills. As a result, they are in constant need of finding appropriate locations for these activities. Due to the difficulty of securing temporary camp sites, the Royal Rangers organization intends to acquire and develop its own campground. The project site has been in the ownership of the



Page 7



Page 8

Assemblies of God since 1943, and has been deeded to the Royal Rangers organization for this purpose.

As outlined by the project applicant, the objectives for the proposed project are as follows:

- To provide a secure location for mountain camping experiences for Royal Rangers groups.
- To provide activity areas and amenities at the campground to keep young minds and hands busy and actively learning skills.
- To provide areas for the religious development of the Royal Rangers in conjunction with the outdoor experiences.
- To provide a location for the training of Royal Rangers leaders.
- To develop the campground in such a manner as to show respect for the natural contours of the land, minimize the removal of natural vegetation, and provide an environment as natural as possible while providing amenities and training for the young campers.
- To provide a museum and nature center within the fort to assist camp leaders in educating the campers about the mountain environment.
- To provide a well-rounded experience for the spiritual and physical development of young boys to young men.

3. PROJECT CHARACTERISTICS

The proposed campground would accommodate different camp sessions, as described below and in Table 2 on page 10.

 Regional Camp Sessions. The regional camp sessions, including the Southern Pow Wow, Central Pow Wow, Eastern Pow Wow, the Frontiersman Camping Fellowship (FCF) camp, and the national training camp, would run from three- to five-day intervals once a year; these annual regional camps would consist of up to 800 campers.

Table 2

ROYAL RANGERS CAMP SESSIONS, FREQUENCY, AND ON-SITE POPULATION

Camp Session	Frequency	Interval	Estimated No. of Campers	Estimated No. of Staff
Southern Pow Wow	once/year	3 days	800	80
Central Pow Wow	once/year	3 days	800	80
Eastern Pow Wow	once/year	3 days	400	40
Frontiersman Camping Fellowship Camp	once/year	4 days	400	40
Family Camp	once/year	5 days	400-600	60
Summer Camp	five/year	4 days	100-200	20
National Training Camp	once/year	4 days	100	10
Sectional Camp	six/year	3 days	100	10
School Science Sessions	12/year	4 days	200-225	25

Source: Hogle-Ireland, Inc., Royal Rangers Youth Campground and Conference Center: Project Description to Accompany Request for Proposals to Prepare Environmental Impact Report, February 27, 2003; Urban Crossroads, Royal Rangers Youth Campground and Conference Center, Focused Traffic Impact Analysis, Revised May 22, 2002; AG Mechanical Engineers, Inc., Water Use Analysis for Royal Rangers Youth Camp and Conference Center, March 28, 2002.

- Family Camp Sessions. A family camp session would also run from a three- to a five-day interval once a year; annual family camps would range from 400 to 600 campers.
- *Summer Camp Sessions*. The summer camp sessions would run for five-day intervals (Wednesday to Sunday) and would consist of approximately 100 to 200 campers; approximately five summer camp sessions are anticipated to occur annually.
- Sectional Camp Sessions. The sectional camp sessions would run for three-day intervals (Friday to Sunday) and would consist of approximately 100 campers; approximately six sectional camp sessions are anticipated to occur annually.
- *Science Group Camp Sessions*. The campground would also be available to school science groups for four-day camp sessions (Monday to Thursday) and would consist of approximately 200 to 225 campers; approximately 12 school science group camp sessions are anticipated to occur annually.

As shown in Table 2, the proposed camp facility would be used by the different camp sessions approximately 108 days per year. The camp sessions would utilize the camp facility independently and, thus, would not be conducted concurrently. Table 3 on page 11 presents the proposed hours of operation for the different camp sessions/groups that would be accommodated by the camp facility.

Table 3
HOURS OF OPERATION

Camp	A	Large mphitheater	Small Amphitheater	Gun Range	Rec/Pool
Southern Pow Wow	Fri: Sat: Sun:	7 – 10 p.m. 9 – 10 a.m. / 7 – 10 p.m. 8 – 10 a.m.		Sat: 10 A.M. – 4:30 P.M.	Sat: 10 A.M. – 4:30 P.M.
Central Pow Wow	Fri: Sat: Sun:	7 – 10 p.m. 9 – 10 a.m./ 7 – 10 p.m. 8 – 10 a.m.		Sat: 10 A.M. – 4:30 P.M.	Sat: 10 A.M. – 4:30 P.M.
Eastern Pow Wow	Fri: Sat: Sun:	7 - 10 p.m. $9 - 10 a.m. / $ $7 - 10 p.m. $ $8 - 10 a.m.$		Sat: 10 A.M. – 4:30 P.M.	Sat: 10 A.M. – 4:30 P.M.
FCF Camp	Fri: Sat: Sun:	9 – 9:30 A.M./ 7 – 9 P.M. 7 – 9 P.M. 10 A.M. – noon		Fri, Sat: 10 A.M. – 4:30 P.M.	Fri, Sat: 10 A.M. – 4:30 P.M.
Family Camp	Fri: Sat: Sun:	9 – 9:30 A.M./ 7 – 9 P.M. 7 – 9 P.M. 10 A.M. – noon		Sat: 10 A.M. – 4:30 P.M.	Sat: 10 A.M. – 4:30 P.M. Sun: 10 A.M. – 4:30 P.M.
Summer Camps National Training Camp			Wed, Thu, Fri, Sat: $6-9$ P.M. Thu: $8-10$ P.M.	Thu, Fri, Sat: 10 A.M. – 4:00 P.M.	Thu, Fri, Sat: 10 A.M. – 4:00 P.M. High and Low Ropes only
Sectional Camps			Sat: $6 - 9$ P.M.	Sat: 10 A.M. – 4:30 P.M.	Sat: 10 A.M. – 4:30 P.M.

Source: Hogle-Ireland, Inc., Royal Adventure Campground - Specific Uses, July 2002.

Although the maximum capacity of the campsite is 1,048 persons, the majority of the camps that operate throughout the year would consist of a maximum of 200 to 225 campers.¹

A description of the various components of the proposed project is presented below; a conceptual site plan is shown in Figure 4 on page 12. The buildings proposed for the site would be designed in a western-theme, invoking log cabins and frontier-style forts. The largest

¹ Hogle-Ireland, Inc., Royal Rangers Youth Campground and Conference Center: Project Description to Accompany Request for Proposals to Prepare Environmental Impact Report, February 23, 2003.

proposed structure would be the fort building, as further described below. The proposed project would result in the disturbance of approximately 33 acres (66 percent) of the project site (13.02 acres of building, parking lot, and grass parking lot coverage; 3.52 acres of tent camping/fire circles, gun and archery ranges, a fort courtyard, rope courses, and mountain biking trails; 1.95 acres of temporary site disturbance during construction; and 14.54 acres of fuel modification zone.² The remaining 17 acres (34 percent) of the site would be left as natural forest.

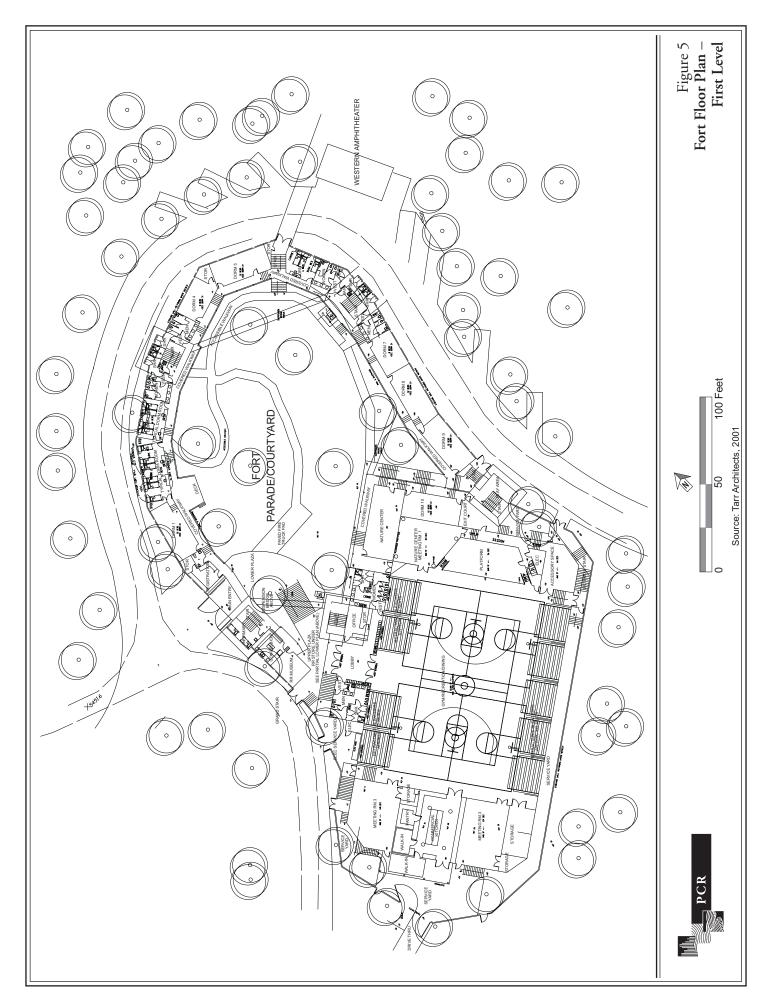
Currently, it is estimated that there are approximately 6,750 trees six inches in diameter or larger, located on the project site. Although tree removal would not occur in all areas of the site that are subject to disturbance, a total of 2,165 trees that are six inches in diameter or larger would be removed, representing approximately 32 percent of the total timber stand for the site.³ However, the mountain communities of the County of San Bernardino are presently experiencing a bark beetle infestation, which has resulted in dead trees that are potent fuel for devastating wild fires. In April 2003, the County Board of Supervisors approved an action plan to remove and dispose of dead trees to protect the mountains from increased fire danger. Consequently, additional trees may need to be removed from the project site to assist in the eradication of the bark beetle infestation. The specific number of individual trees to be removed would be identified at the time the surveyors stake the road clearing limits for the project.

Fort Building and Courtyard

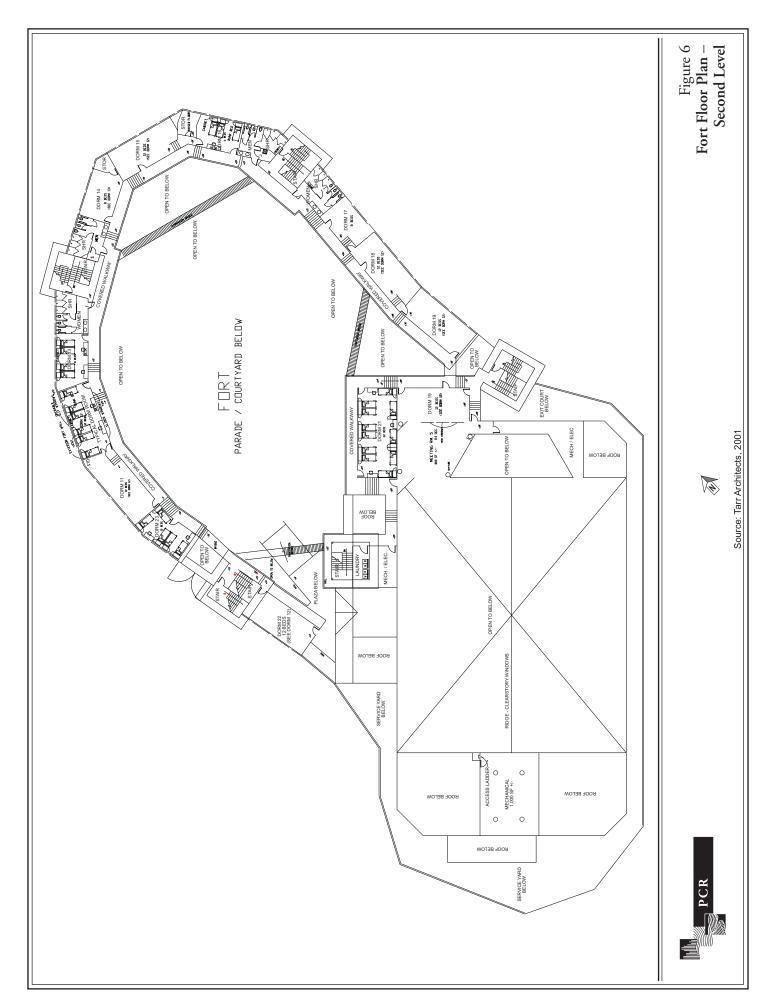
The proposed project incorporates a 51,600-square foot frontier-style fort structure, which would include 10 dormitories with a total of 248 beds, a gymnasium, dining room and meeting rooms. Both the fort and the adjoining courtyard would be enclosed with a concrete wall designed to resemble real wood and create the appearance of a wood stockade. The wall enclosing the courtyard would be approximately 28 feet in height and would feature four towers approximately 38 feet in height. The towers would feature wooden balustrades and exposed log elements. The exterior of the gymnasium would feature board and batten sidings, a standing seam metal roof, and a row of clerestory windows. The proposed fort building would be setback approximately 50 feet from Highway 189, with Parking Lots A and B providing some separation between the highway and the fort structure. Conceptual floor and elevation plans for the fort structure are presented in Figure 5 through Figure 7 on pages 14 through 16.

² Tarr Architects, Building/Structure Occupancy Stats, Enlarged Partial Site Plan – South, March 13, 2003.

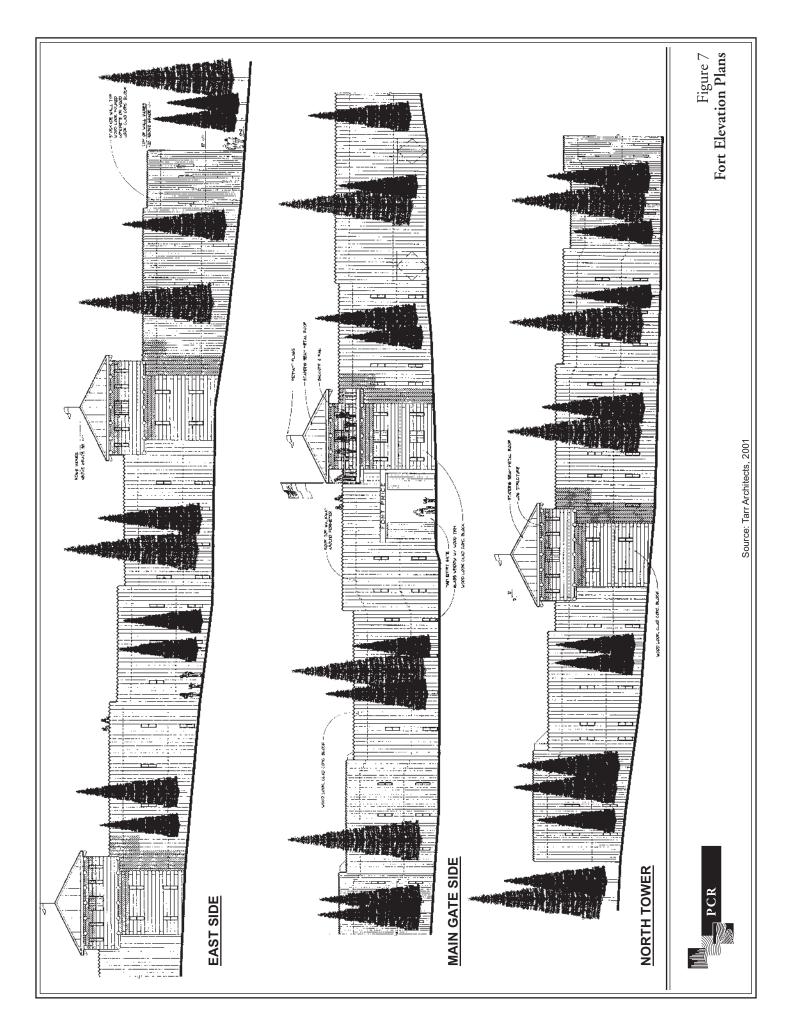
³ Bridges, James and Hatcher, John, Foresters Report for Royal Rangers Adventure Camp, Assemblies of God Church, May 2002; PCR Services, June 2003; Tarr Architects, Building/Structure Occupancy Stats, Enlarged Partial Site Plan – South, March 13, 2003.



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Camping Grounds

The tent camp areas would consist of approximately 340 tent sites, which would accommodate approximately 800 persons, with two to four campers in each tent. The tent sites would be arranged around approximately 50 fire circles, which would be located and placed in areas approved by the Crest Forest Fire Protection District, primarily on the southwestern half of the project site, as illustrated in Figure 4 on page 12. A permit would be required and issued by the Crest Forest Fire Protection District to use the fire circles/campfires. To date, no specific requirements regarding fire circle/campfire use have been specified by the Fire District.

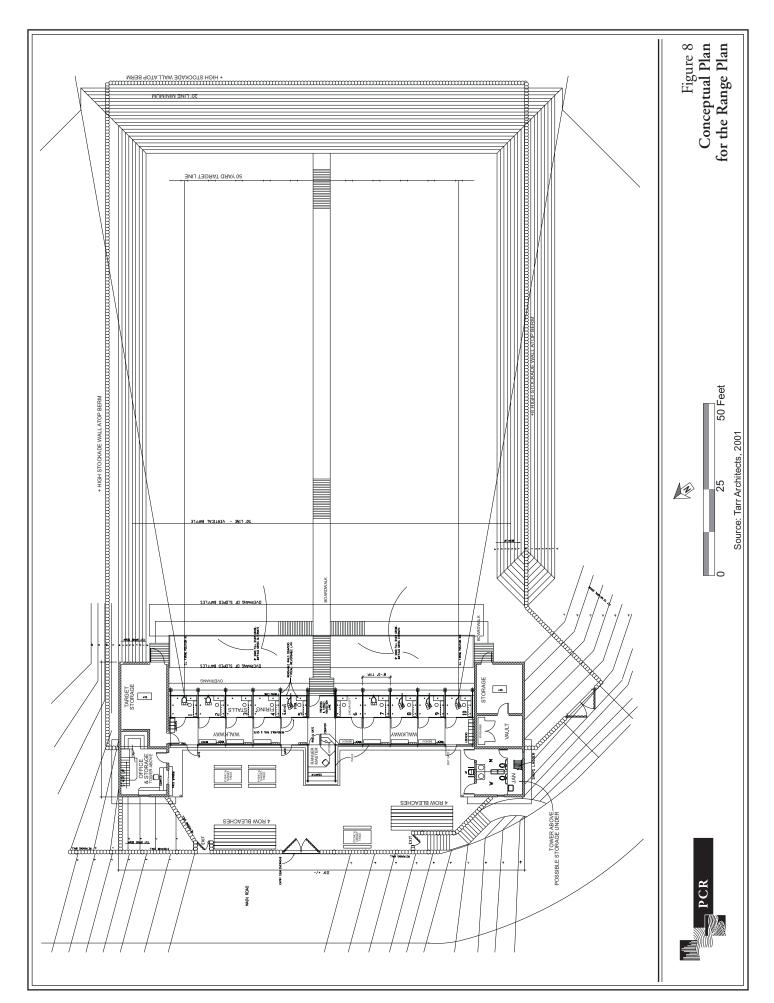
Amphitheaters

Two outdoor amphitheaters are proposed as part of the camp facility. A western style amphitheater, the smaller of the two, would be located adjacent to the fort and would seat 300 people. The use of this small amphitheater would be limited to Wednesdays through Saturdays from 6:00 P.M. to no later than 10:00 P.M., as shown in Table 2 on page 10. The larger amphitheater would be located on the southwestern portion of the project site and would seat 1,000 people; the use of this amphitheater would be limited to Fridays, Saturdays, and Sundays, as shown in Table 2. Both amphitheaters would be used by camp participants only. The sound system for the amphitheaters is proposed to be integrated within the aisle ways of the seating area to help keep sound at the audience level. This design would reduce sound volumes in comparison to a standard amplified sound system that would project much louder sound beyond the amphitheater.

Gun Range

A 50-yard gun range is proposed in the southwestern portion of the project site. Conceptual plans for the gun range are shown in Figure 8 on page 18. It would be designed to exceed the minimum guidelines for safety and noise abatement as specified by the National Rifle Association (NRA). Compliance with these guidelines would ensure that all ammunition is trapped within the range. The gun range would be situated within an 8- to 20-foot earthen berm with an 8-foot high log wall on top of the berm on all four sides to prevent over shots and ricochets and to muffle noise. The 20-foot height (depth) would be at the target end of the range. The gun range would generally not be fully enclosed but would include a roof over the shooting gallery. The range would be in operation from 10:00 A.M. to no later than 4:30 P.M. The following components would also be incorporated into the project design to prevent over shots and ricochets:

• A steel barrier on the roof over the shooting gallery;



Page 18

- Deflector panels in front of the range structure;
- A high baffle located mid-way within the range;
- A bullet shield located at the end of the range; and
- Either a sand or grass floor for the firing lanes.

Royal Rangers would employ qualified range officers to operate the gun range. All range officers, would be approved by the Royal Rangers District office and certified by the NRA and the National Muzzle Loading Rifle Association (NMLRA). The range officers would be responsible at all times for the safe operation of the gun range.

Guns and ammunitions would be stored in a concrete, locked ammunition vault inside the gun range, accessible only to the certified range officers. The types of weapons that would be allowed on the gun range include BB guns, pellet guns, smallbore (.22 rimfire), muzzleloading rifles, pistol (any bolt action), and shotguns. The types of ammunition allowed on the gun range are limited to any soft lead projectile and any round approved for target competition; no "high-powered" round would be allowed for use. According to the NRA, no open range can guarantee that a stray shot or ricochet would be completely prevented.⁴ The intent and goal of the project is to contain all properly and normally shot bullets and ricochets within the shooting range. The proposed project would include the components identified above to create controls that would prevent a normally shot bullet from any normal range shooting position, whether prone, sitting, or standing and with assumptions as to natural ricochet patterns, from exiting the range.

Archery Range

A 25-yard archery range proposed on the southwestern portion of the site would use a natural 10-foot depression on one side of the range as a natural buffer. As an additional safety measure, there would be an 8-foot berm and a 4-foot split-rail fence at the target end of the range. The split-rail fence would also extend around the western side of the archery range. Campground staff would provide supervision and would be responsible for the safe operation of the archery range.

Recreational Pools

A swimming pool, slide/splash pool, and wading pools would be located on the southwestern portion of the project site. A concession stand, bathrooms, and shade/eating area

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National Rifle Association, Range Department, The Range Source Book, November 1999.

would also be provided. The pool areas, which would be designed to accommodate a maximum combined capacity of 300 people, would be enclosed with a combination fence and retaining wall, approximately six to eight feet in height. The pool areas would be in operation from 10:00 A.M. to no later than 4:30 P.M. The pool areas would be supervised by certified lifeguards employed by Royal Rangers during their hours of operation. Outside of hours of operation, these areas would be secured to avoid unsupervised access and use by camp visitors.

Recreational Areas

Recreational areas would include two rope apparatus courses, three sand volleyball courts, two basketball courts, a grass hockey field, a mountain bike course, and nature trails. These areas would be located on the southwestern portion of the project site, with the exception of the two rope apparatus courses and nature trails, which would be located on the northeastern portion of the site. Mountain bike use would be restricted to designated courses only. The nature trails would follow existing roads and skid pads from previous logging activities; however, some of the trails would require clearing and/or minor cut-and-fill, to improve trail conditions. One new trail would be created to provide access to a proposed outdoor chapel, as described below. With the exception of the two basketball courts, none of the recreational areas would be paved.

Outdoor Chapel

The proposed chapel (Vista Chapel) would be located on the northeastern portion of the project site. The outdoor chapel would have amphitheater-style, log bench seating for 75 people and would not be contained within a structure. The chapel is intended for intimate gatherings, and no amplification/sound system or stage lighting would be used.

Ancillary and Support Uses

In addition to the project components described above, the project would also include development of a number of ancillary and support uses, including the following:

- Seven small staff cabins, one large staff cabin, a Director's cabin, an Assistant Director's cabin, an office cabin, a commissary cabin, and an infirmary cabin, for a total of 13 cabins with beds for temporary and permanent staff;
- Bathroom and storage facilities throughout the project site;
- A maintenance shop located adjacent to Parking Lot F and a bike shop located near the southwestern corner of the project site; and

• Two guard towers situated at the main entrance to the project site and at one of the secondary emergency access locations near the southwestern corner of the project site.

Parking and Site Access

Parking to meet average demand is proposed for the campsite, with overflow parking areas for large events to be provided in designated unpaved areas. The proposed project would comply with the design standards and parking requirements specified in the County Development Code. Based on the main functions and buildings at the campsite and the number of staff and campers, the required parking on-site would be 353 parking spaces.⁵ The proposed project would provide approximately 491 parking spaces, which would meet and exceed the minimum code requirements.

Vehicular access onto the project site would be provided via a gated entry along Highway 189. Secondary emergency access would be provided at four locations, one along the project site's northern frontage to the west of the main entrance and adjacent to Highway 189 and three along the project site's southern boundary through the U.S. Forest Service (USFS) property to Highway 18; these locations would be gated and locked. Internal circulation would be provided via paved roads with widths of 20 feet for one-way roads or roads on steep terrain and 26 feet for main driveways with two-way access. These internal roads, which would be designed to comply with the Crest Forest Fire Protection District guidelines, provide access to the seven parking lots, including the field hockey area for overflow parking, and the different project components described above. More specifically, the internal roads generally loop around the fort building, the pool area, the recreational facilities, and the large amphitheater, as shown in Figure 4 on page 12.

Fire Control

In compliance with the Crest Forest Fire Protection District requirements, all buildings would have fire truck access within 150 feet. Buildings over 4,000 square feet in size would be equipped with fire sprinklers. Most structures would have one-hour exterior firewalls or better. Hydrants would be spaced every 300 feet along driveways. Hose bibs would be located adjacent to all fire sources. Additionally, all gates would be outfitted with a "Knox Box," which is a high-security box system that is designed to give firefighters and emergency services immediate access to secured areas. Further discussion of the fire protection planning requirements

Based on the following parking requirements: Conference Center = 1 space per 3 guests = 1,048 guests/3 = 349 spaces; parking for loading is limited to a maximum of 4 spaces.

established by the Crest Forest Fire Protection District for the proposed project is included in Section 3.E, Hazards and Hazardous Materials.

In addition, in accordance with the requirements of the Crest Forest Fire Protection District, a permanent 100-foot wide fuel modification zone would also be placed around the perimeter of the project site to provide a firebreak and deter the spread of any potential forest fire. Removal of brush, plants, ground cover and trimming of tree branches from the ground to a height of 10 feet would establish the fuel modifications zone. Plant materials that accumulate within this zone would be cleared regularly to maintain accumulation to a minimum in accordance with the requirements of the Crest Forest Fire Protection District. Project plans relative to fire protection and fire prevention would be reviewed by the Crest Forest Fire Protection District prior to the issuance of building permits for the project.

Lighting

On-site lighting would be limited to maintain a camp atmosphere and would be provided where necessary to support the safe use and security of the camp. Amphitheater lighting would be used only during the actual operation of the amphitheaters; however, security lighting would be provided during nighttime hours, as necessary. The fort and fort parking would be equipped with security lighting systems that would result in low-intensity illumination during nighttime hours. There would be a "porch" light on each of the other outbuildings, including cabins, restrooms, and the maintenance shop. The trails and roads would not be illuminated.

Lighting at the project site would be shielded in accordance with nationally recognized practices and recommendations of lighting professionals. Specifically, all stationary exterior light fixtures that are proposed would have 90-degree shields to restrict glare and would address issues, such as "sky glow" (luminance in the atmosphere caused by dust, water vapor, and other particles that reflect and scatter any stray lighting that is reflected or emitted into the atmosphere) and "light trespass" (any form of artificial illuminance emanating from a light fixture or illuminated sign that penetrates other property and creates a nuisance).

Utilities

All utility lines would be placed in the on-site roadways, with the possible exception of one reach of the sewer line from the pool area northwest to the bike shop/bath area. On-site utility lines would connect to existing utilities off-site. An existing water line easement would be relocated as required subject to review and approval by the Crestline Village Water District. The District has recommended that the new location of the water line be along the roadway around the fort building and back to the original easement at proposed Parking Lot A, as shown in Figure 4 on page 12.

Setbacks and Fencing

The proposed project would maintain a minimum 15-foot setback from the property line along Highway 189. Since there are no uses located adjacent to the project site east of Highway 189, there are no other setbacks required. A four-foot high split rail fence would be installed along the perimeter of the project site.⁶

Construction Phasing and Schedule

Construction of the proposed project is anticipated to occur incrementally; Table 4 on page 24 presents the phases of construction for development of the project. Construction of Phase 1 is anticipated to occur from July 2004 to November 2004. No specific time frames have been established for each of the succeeding phases; however, construction of Phases 2 to 8 is anticipated to commence in July 2005 and continue for approximately five years, as funds and weather permit. Accordingly, the estimated completion date for the project is March 2010.

4. INTENDED USES OF THE EIR

This Environmental Impact Report (EIR) will serve as the environmental document for the proposed actions associated with development of the Royal Rangers Adventure Campground and Conference Center Project, pursuant with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. The purpose of this Draft EIR is to assist the County of San Bernardino, as the Lead Agency under CEQA, in the decision-making process for the project. In accordance with CEQA (Public Resources Code, § 21002.1), the intended uses of this Draft EIR are to identify the significant environmental impacts resulting from implementation of the proposed project, to indicate the manner in which these significant effects can be mitigated or avoided, and to identify alternatives to the proposed project. This Draft EIR is a Project EIR as defined by the State CEQA Guidelines (§15161).

A series of approvals, entitlements, and permits would be required for project implementation from the County of San Bernardino and various other public agencies. Discretionary approvals associated with the proposed project may include, but are not limited to the following:

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⁶ Tarr Architects, Site Plans for the Royal Adventure Camp at Eagle Ridge Across the Highway from Pinecrest CCC (1140 Pinecrest Road), Old Settlement Drive, Twin Peaks, CA, July 6, 2001.

Table 4

ROYAL RANGERS ADVENTURE CAMP CONSTRUCTION PHASING AND ESTIMATED SCHEDULE

Phase	Project Component	Schedule
1	Grading, roads, site utilities, perimeter fencing and gates, entry signage, tent camping for approximately 300 campers, storage building, and bathroom building and associated storage.	July 2004 to November 2004
2	Staff cabin (large, 14 beds, log cabin structure), commissary cabin (log cabin structure), storage building, bathroom building and associated storage.	July 2005 to March 2010
3	Office (registration for tent camping), amphitheater (1,000 seats), infirmary cabin, recreation fields, storage building, three bathroom buildings and associated storage.	July 2005 to March 2010
4	Fort Building (248-bed dormitories, gymnasium, dining and meeting rooms), maintenance shop, Associate Director's cabin, guard tower, rope apparatus course areas, and storage building.	July 2005 to March 2010
5	Pools with concession, shade area, bathroom building and associated storage, tower building, and storage building.	July 2005 to March 2010
6	Western-style amphitheater (300 seats) and storage building.	July 2005 to March 2010
7	Staff cabin, Director's cabin, Vista chapel, bike shop, observation tower, archery range, building and observation tower.	July 2005 to March 2010
8	Staff cabin and gun range.	July 2005 to March 2010

Source: Tarr Architects, Site Plans for the Royal Adventure Camp at Eagle Ridge Across the Highway from Pinecrest CCC (1140 Pinecrest Road), Old Settlement Drive, Twin Peaks, CA, July 6, 2001.

County of San Bernardino

- Certification of Final Environmental Impact Report
- Grading and building permits
- Conditional Use Permit for a year-round campground and conference center
- Other approvals, if determined to be required in the entitlement process

Other Agencies

- U.S. Forest Service (Tree Harvesting Plan/Permit, use of roads for emergency access; application for Transportation and Utility Systems and Facilities on Federal Land; Special Use Permit for the gun range)
- California Department of Fish and Game (Streambed Alteration Agreement; 2081 "Take Permit")
- California Department of Forestry (Timber Harvest Plan approval; Timberland Conversion Permit)
- California Department of Transportation (Culvert Installation/Site Drainage; Encroachment Permit)
- Regional Water Quality Control Board (Lahontan Region) (Wastewater treatment requirements; NPDES requirements)
- San Bernardino County Sheriff's Office (Special Use Permit for the gun range)
- Crestline Village Water District (Water Service Agreement)
- Crestline Sanitation District (Sewer Line Connection Permit)
- Crestline-Lake Arrowhead Water Agency (Water Supply)
- Crest Forest Fire Protection District (Special Use Permit for the gun range)
- Crestline Fire Protection District (Fire flow approval)

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES A. AESTHETICS

The purpose of this section is to identify and describe visual and aesthetic resources in the project area and analyze the potential for the project to result in significant visual and aesthetic impacts. This section also analyzes potential impacts associated with light and glare that may result with implementation of the proposed project.

1. ENVIRONMENTAL SETTING

The characterization of existing visual resources and available scenic vistas on the project site and the surrounding areas form the basis of this aesthetics and views analysis. Aesthetics may be defined as visual qualities within a given field of view and may include such considerations as size, shape, color, texture, and general composition as well as the relationships between these elements. Aesthetic features often consist of unique or prominent natural or manmade attributes or several small features that, when viewed together, create a whole that is visually interesting or appealing.

Views refer to visual access to aesthetic features. Viewsheds, or the extent of a given view, are typically defined by landscape elements and building locations. Existing views may be partially obstructed or entirely blocked by modification of the environment. Conversely, modifications to the natural or man-made landscape of an area may create or enhance view opportunities.

Light impacts are typically associated with the use of artificial light during the evening and nighttime hours. Artificial light may be generated from point sources as well as from indirect sources of reflected light. Uses such as residences, hospitals, and hotels are considered light sensitive since they are typically occupied by persons who have expectations for privacy during evening hours and who are subject to disturbance by bright light sources. Wildlife habitat areas may also be considered light sensitive if the introduction of light sources would compromise the quality and function of a habitat area.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces. Daytime glare generation is common in urban areas and is typically associated with mid- to high-rise buildings with exterior façades largely or entirely comprised of highly reflective glass or mirror-like material from which the sun

can reflect at a low angle in the periods following sunrise and prior to sunset. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources such as automobile headlights. Glare generation is typically related to either moving vehicles or sun angles, although glare resulting from reflected sunlight can occur regularly at certain times of the year. Glare-sensitive uses generally include residences and transportation corridors.

a. Applicable Plans and Regulations

In the County, scenic highways are subject to additional land use and aesthetic controls under the County's Scenic Highway Overlay, which is a component of the Scenic Resources Overlay District, as established in the County Development Code (Title 8 of the San Bernardino County Code). The intent of this Overlay District is to provide development standards that will protect, preserve, and enhance the aesthetic resources of the County. Design considerations can be incorporated in many instances to allow development to coexist and not substantially interfere with the preservation of unique natural resources, roadside views and scenic corridors of such natural resources. It is also the intent of the Scenic Resources Overlay District to implement state and federal programs and regulations regarding scenic highway routes.

In addition, the County of San Bernardino's Open Space Plan aims to strike a balance between the need of an urbanizing County and the many uses that require open lands. Rapid population expansion has affected the quality of scenic areas in the County, which contains vistas that rival many found elsewhere in the State and the nation. The scenic quality of routes that cross the County can be degraded by advertising (signage) and urban uses along these corridors. The Open Space Plan seeks to preserve the outstanding scenic resources that exist in the County, and to provide additional opportunities for the public to enjoy valued scenic resources. The County of San Bernardino General Plan Open Space/Recreation/Scenic Resources goals and policies that are pertinent and applicable to the proposed project are identified as follows:

Goals

C-56 Restrict development along scenic corridors.

C-57 Provide for visual enhancement of existing and new development through landscaping.

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⁷ County of San Bernardino, Open Space: A Plan of Open Space and Trails for the County of San Bernardino, 1991.

Policies/Actions

- OR-51 Because the provision of scenic areas, trails, and scenic highways is an integral part of the planning process, the County shall require the following:
 - a. Review of proposed development along scenic highways and trails shown on the Resource Overlay Maps to ensure preservation of scenic values for the traveling public and those seeking a recreational driving experience.
 - b. Require removal of non-conforming signs per County sign ordinance standards for new uses or substantial revisions to existing uses.
 - c. Along Scenic Routes, prohibit primary free standing signs greater than 18 square feet. This shall include all primary free standing signs oriented to the scenic right-of-way.
 - d. Require provision of vantage or vista points along scenic routes by new development proposed adjacent to those routes for scenic and interpretive displays and roadside rests.
 - h. Encourage undergrounding of all utility facilities for all projects requiring discretionary or ministerial action.
 - 1. Review site planning, including architectural design, to prevent obstruction of scenic views and to blend with the surrounding landscape.
- OR-57 Because the preservation of scenic qualities can, in many cases, be achieved only through the preservation of existing landform and natural features, the County shall require the following:
 - b. Require that natural landform and ridgelines be preserved by using the following measures:
 - i. Keeping cuts and fills to an absolute minimum during the development of the area.
 - ii. Requiring the grading contours that do occur to blend with the natural contours on site or to look like contours that would naturally occur.

iii. Encouraging the use of custom foundations in order to minimize disruption of the natural landform.

These goals and policies are pertinent to the proposed project because of the proximity of the project site to scenic corridors in the mountain area. Scenic corridors have been designated in the County to support a continuous network of roads that interconnect many of the jurisdictions visually attractive areas. These corridors, which consist of visible land areas outside the highway right-or-way, are designed to enhance the opportunities for recreational driving and to protect views from the roadways. The County currently has 32 designated scenic routes, which range in scenic value and interest from high mountain pass vistas, such as those that exist in the project vicinity, to desert terrain and agricultural areas. The southern and eastern boundaries of the project site are within 150 feet to 350 feet of Highway 18, a County-designated scenic route.

In some instances, County-designated scenic routes have also been designated as state scenic highways by the California Department of Transportation (Caltrans); presently, there are no state scenic highways in the immediate vicinity of the project site. However, the length of the "Rim of the World Highway," which includes portions of Highways 138, 18, and 38, has been officially designated as a Scenic Byway by the U.S. Forest Service (USFS).⁸

The USFS manages the majority of the mountain regions within the County, which are primarily located within the Angeles and San Bernardino National Forests. Immediately east of the site is USFS property with several hiking trails, consisting of unpaved dirt paths generally running parallel to Highway 18. However, these trails are not formally dedicated trails and are not identified on any federal or local maps or plans. Trails form an important part of the County's overall open space plan because they provide public access to open space lands and serve as an active recreational amenity. Generally, the project site is not visible from these trails due to the topography of the area, with the exception of the trails near the northeastern portion of the project site. These trails are slightly higher in elevation than the project site and, therefore, have visual access to the site.

b. Visual Setting

The project area, which is in the vicinity of Strawberry Peak, is known for its scenic values. The County Open Space Plan, a component of the General Plan, identifies areas within the site vicinity as Major Open Space Area No. 20. More specifically, the project site is located in the northwest quadrant of Section 30 of Township 2 North, Range 3 West, and is partially

⁸ County of San Bernardino, County of San Bernardino General Plan, revised September 14, 1995.

within Open Space Area No. 20.9 These areas are identified to be retained as open space for scenic mountain vistas based on both views from the project site itself and from off-site observation points.

c. Existing Views

The project site is currently undeveloped and vegetated. The most prominent views of the project site depict a coniferous forest, consisting of Ponderosa pine, sugar pine, California black oak, white fir, and incense cedar trees, as shown in Figure 9 on page 31. These trees cover approximately 70 percent of the project site. According to the Foresters Report (Appendix C) prepared for the project site, there is an average of 135 trees (six inches in diameter or larger) per acre on the project site. The Foresters Report also estimated the number of dead or diseased trees with a diameter at breast height (DBH) of at least six inches to be approximately two trees per acre. Additionally, fir and cedar saplings measuring less than three inches DBH were also found dead or diseased at the time of this tree survey.¹⁰

Although views of the project site add to the aesthetic quality and scenic value of the project area, they do not include unique characteristics that make them distinct from other forested parcels in the area. Views of the project site, which generally consist of coniferous trees and thick ground cover, may be observed primarily from Highway 189 and several USFS hiking trails immediately east and south of the project site primarily at higher elevations than the project site. Accordingly, viewers of the project site would be limited to motorists traveling along Highway 189 in either direction and users of the adjacent hiking trails. Due to the topography and the forested nature of the project area, there are no direct or accessible views of the project site from other off-site locations, including Strawberry Flats and other residential areas in the project vicinity.

2. THRESHOLDS OF SIGNIFICANCE

The County has not established local significance thresholds. Therefore, the following thresholds of significance provided in the CEQA Guidelines (Appendix G) are used to determine the potential for significant aesthetic or light and glare impacts. The proposed project would have a significant impact if it would result in one or more of the following:

⁹ County of San Bernardino, Open Space: A Plan of Open Space and Trails for the County of San Bernardino, 1991

Bridges, James and Hatcher, John, Foresters Report for Royal Rangers Adventure Camp, Assemblies of God Church, May 2002.

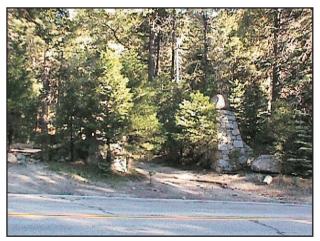


Photo 1. View of the project site looking southeast along Highway 189 near the proposed entrance.



Photo 2. View of the project site looking southwest from the proposed Fort Building location.



Photo 3. View of the project site looking northwest from a USFS hiking trail.



Photo 4. View of the project site looking south along Highway 189.

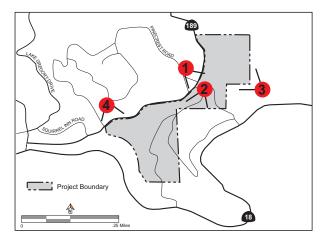




Figure 9 Views of the Project Site

- The obstruction of any scenic vista or views open to the public;
- Substantially damage scenic resources;
- Substantially degrade the existing visual character or quality of the site; and/or
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

3. ENVIRONMENTAL IMPACTS

a. Methodology

The assessment of aesthetic impacts is based on the potential for the proposed project to result in detrimental changes to the site's visual resources, its general aesthetic character, and its relationship with the surrounding environment. The potential for project implementation to improve the aesthetic qualities associated with the site is also addressed. As part of this analysis, distinct aesthetic resource components of the site and the surrounding areas were recorded based on field surveys, photographic interpretation, and topographic analysis.

The evaluation of views is based on the potential for the project to result in obstruction and degradation of scenic views to aesthetic resources within and near the project site as perceived by the public (e.g., motorist traveling along Highway 189 and Highway 18 in the project vicinity, hikers on USFS trails) and private citizens (e.g., residents and property owners in the project vicinity).

Three visual simulations were prepared for the proposed project, depicting anticipated views along Highway 189 and along a USFS trail near the northeastern portion of the project site. Without the benefit of a tree survey and a tree plan specific to the project site, tree removal to accommodate the proposed structures was estimated based on examination of a number of factors, including the location of existing trees (i.e., the location where the tree trunks touch the ground), review of conceptual architectural floor plans and elevation plans, preliminary grading and road slope plans, and the locations of the proposed structures. While these visual simulations represent reasonable approximations and depictions of future views of the project site with the proposed project, they are not necessarily precise. However, these visual simulations generally illustrate the massing and the anticipated change in views upon project implementation.

The analysis of light conditions associated with the project site consisted of visual observations during the evening and nighttime hours. The evaluation of nighttime illumination included an assessment of the lighting conditions within the project vicinity, as well as the degree of exposure to light intensities experienced by surrounding land uses. A qualitative analysis of the potential for an increase in ambient light levels and light spillover onto off-site light-sensitive uses was conducted. Nearby sensitive receptors were identified during a survey of the area.

The evaluation of existing glare conditions associated with the project site included visual observations of the site. The potential for substantial changes to existing glare generation from future development of the site was then evaluated. Nearby receptors sensitive to glare exposure were identified during a survey of the area.

b. Project Features

The proposed project would include buildings designed in a western theme, invoking log cabins and a frontier-style fort. The largest proposed structure, and the one most visible from off-site viewpoints, including Highway 189 and several public hiking trails, would be the Fort Building. This building would consist of the gymnasium and the enclosed courtyard. The wall enclosing the courtyard would be approximately 28 feet in height and would feature four towers that are approximately 38 feet in height. The exterior wall of this courtyard would be constructed of concrete with a façade treatment to create the appearance of a wood stockade. The towers would feature wooden balustrades and exposed log elements. The exterior of the gymnasium would feature board and batten siding, a standing seam metal roof and a row of clerestory windows. The other proposed buildings would feature similar materials with either board and batten or log cabin style walls and metal roofs.

Development of the project site would change the character of the site from undeveloped, forested open space to a private campground and conference center. As further described in Chapter 2.0, Project Description, the project components include a fort structure, two amphitheaters, swimming pools, a gun range, an archery range, tent camps, rope apparatus areas, recreational courts, trails and paths, and an outdoor chapel, which would replace a vacant parcel consisting of coniferous forest.

To accommodate the proposed development, approximately 2,165 of the 6,750 trees that are six inches in diameter or larger (approximately 32 percent) would be removed from the project site. Additionally, an unknown number of diseased trees of various sizes would also be removed in accordance with the recently County-approved action plan to assist in the eradication of the bark beetle infestation. The removal of these trees and the construction of the proposed

project would change the views of the project site along Highway 189 and several USFS hiking trails immediately south and east of the project site, as further described below.

c. Analysis of Visual Impacts

A-1. Change in Scenic Views. The proposed project would convert forested land to built uses, significantly affecting the site's aesthetic resources and, in turn, valued scenic views to the site from Highway 189 and hiking trails located on USFS property. This is a *Significant Unavoidable Impact*.

Three photosimulations were prepared to illustrate the conceptual design, massing, and views of the proposed project, particularly the fort structure and other buildings (i.e., Assistant Director's cabin), along Highway 189 and a hiking trail immediately east of the project site, as shown in Figure 10 on page 35, Figure 11 on page 36, and Figure 12 on page 37.

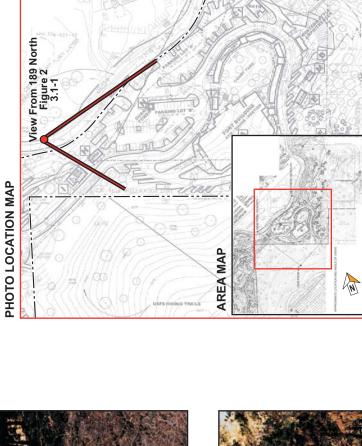
Currently, views of the project site that are observed by motorists traveling on Highway 189 depict an undeveloped forested environment, with two stone pillars/monuments marking the entrance to the project site. With development of the project site as proposed, a notable change in views would occur along Highway 189. Project setbacks along Highway 189 would range from 15 feet near the proposed site entrance at Parking Lots A and B to 100 feet near the northwestern portion of the project site. Generally, existing trees would be retained within the setback area to the maximum extent possible. However, to establish the 100-foot fuel modification zone along the perimeter of the project site, brush, plants, ground cover, branches from the ground to a height of 10 feet, and dead/diseased trees would require removal from the setback area and within the fuel modification zone.

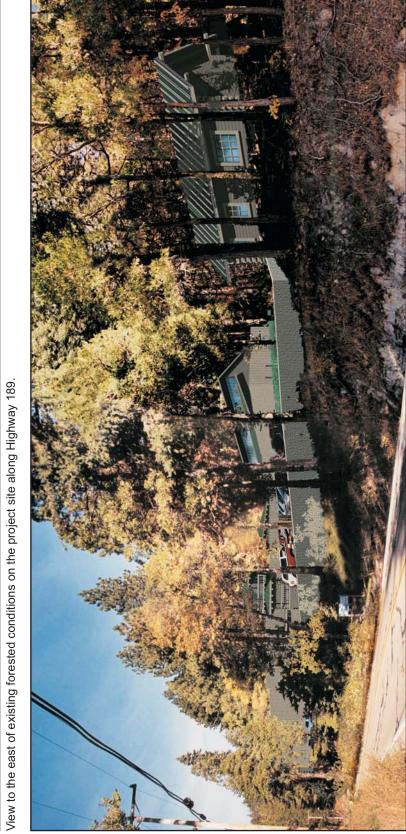
Although the project would utilize and maintain the existing landform and natural contours of the project site to the maximum extent feasible, it is estimated that site disturbance (i.e., excavation, grading, and cut-and-filling) would involve approximately 45,300 cubic yards spread across approximately 33 acres. Consequently, the structures located along Highway 189 (e.g., the fort building, Parking Lots A and B, the Assistant Director's cabin) would be placed at a higher elevation than the roadway, which would make them highly visible to motorist traveling on Highway 189.

The visual simulation depicted in Figure 10 provides a general representation of the project features that would be visible to motorists traveling along Highway 189. Figure 10 demonstrates that the parking lots (Parking Lots A and B), which would accommodate

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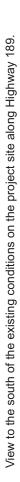
¹¹ Terry M. Tarr, Tarr Architects, Royal Adventure Camp (RAC) 9910, Letter (Approx. Estimated Cut & Fill) to Pamela Steele, Hogle-Ireland, dated September 10, 2002.



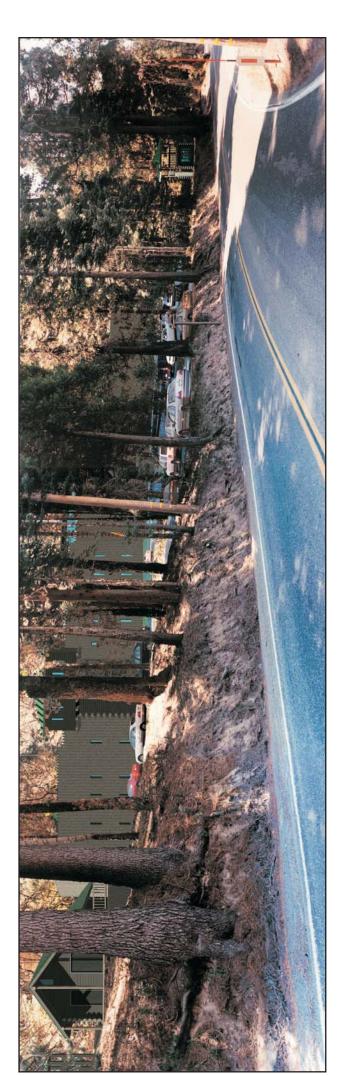


Photosimulation of the camp office, Parking Lot B and the Fort Building and fence enclosure as viewed looking east along Highway 189.



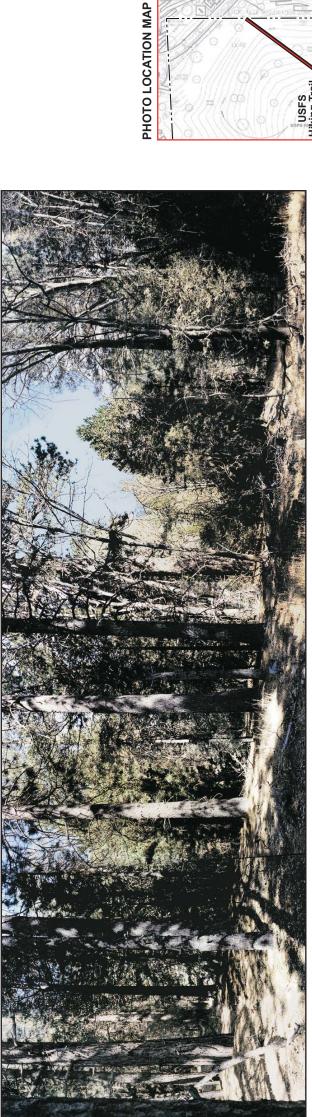


AREA MAP



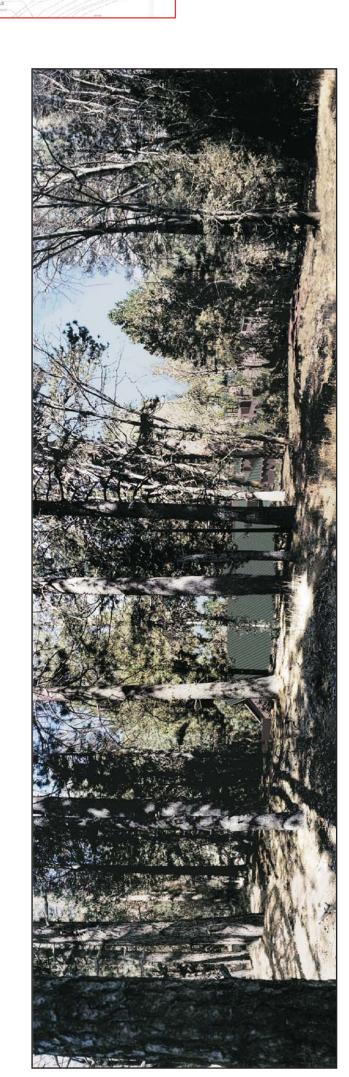
Photosimulation of Parking Lot A and the Fort Building showing view to the south along Highway 189.





an established U.S. Forest Service hiking trail near the eastern boundary of the site (off-site). View to the north of existing conditions on the project site along

AREA MAP



Photosimulation of the Fort Building and the seating area for the Western-Style Amphitheater as viewed along the U.S. Forest Services hiking trail.



automobiles, vans, and larger buses, would be highly visible to motorists traveling along Highway 189. Similarly, the fort building would be highly visible and enter into views along Highway 189. As demonstrated in the visual simulation presented in Figure 11, a large number of trees would be removed to accommodate the fort building and parking lots on this portion of the project site. Similar to the view shown in Figure 10, the parking lots and the exterior wall of the fort building are expected to be the dominating features that would be highly visible to motorist traveling southwest on Highway 189. This would be a significant impact as the proposed project would convert forested land to built uses, significantly affecting views to the site from Highway 189.

In terms of building materials, the proposed project would include buildings designed to depict a western theme with log cabins and a frontier-style fort, which would be enclosed with a 28-foot tall perimeter wall designed to resemble real wood and create the appearance of a wood stockade. This project feature appears to be consistent with the County General Plan Scenic Resources policy of including an architectural design that blends with the surrounding landscape.

Because of the topography in the project area, the project site is not visible from Highway 18, a County-designated scenic route and a part of the "Rim of the World Highway", a USFS Scenic Byway. A natural ridge, which generally parallels the eastern boundary of the project site, forms a barrier between the project site and Highway 18 to break the line-of-sight of the project site from this scenic highway. As such, there would be no impacts on scenic views from Highway 18, which is located within 150 to 350 feet of the project site.

However, the ridge along the eastern and southern boundaries of the site contains several hiking trails on USFS property. As previously mentioned, these trails are not formally dedicated trails and are not identified on any of federal or local maps or plans. The project site is not visible from many of the trails to the southeast of the site due to the topography of the area. Trails near the northeastern portion of the project site, which are located slightly higher than the project site, have a partial view of the project site. As demonstrated in the visual simulation shown in Figure 12, some of the taller structures proposed for the project may be visible from the hiking trails. Figure 12 shows the top of the fort building and the seating area for the western-style amphitheater, as viewed from a hiking trail, located approximately 150 feet south of the fort building outside the project site boundaries and approximately 75 feet higher than the base of the fort building. As with views along Highway 189, the project would change the views of the site from a fairly undisturbed montane coniferous forest into a developed parcel whose taller structures, including the fort building and the amphitheaters, would be visible from hiking trails at higher elevations. This is considered a significant impact.

A-2. Light and Glare Impacts. The proposed project would introduce new sources of light and glare on the project site but would not generate light and glare that would significantly affect sensitive receptors. This is a *Less-Than-Significant Impact*.

On-site lighting would introduce new sources of light and glare to the project site and surrounding areas. As previously described in Chapter 2.0, Project Description, on-site lighting would be limited to that necessary for the use and security of the camp. Amphitheater lighting would be used only during the actual operation of the amphitheaters; however, security lighting would be provided during nighttime hours, as necessary. The fort and fort parking would be equipped with security lighting systems that would result in low-intensity illumination during the nighttime hours. There would be a "porch" light on each of the other outbuildings, including cabins, restrooms, and the maintenance shop. The on-site trails and internal roads would not be illuminated.

Lighting at the project site would be shielded in accordance with nationally recognized practices and recommendations of lighting professionals. Specifically, all stationary exterior light fixtures that are proposed would have 90-degree shields to restrict glare and would address issues, such as "sky glow" (luminance in the atmosphere caused by dust, water vapor, and other particles that reflect and scatter any stray lighting that is reflected or emitted into the atmosphere) and "light trespass" (any form of artificial illuminance emanating from a light fixture or illuminated sign that penetrates other property and creates a nuisance).

Nighttime lighting is detrimental to animals in adjacent habitats because of disruption of light-dark daily rhythms and reduction in the ability of nocturnal species to avoid predators. As concluded in Section 3.C., these impacts by themselves would not be expected to reduce common wildlife populations below self-sustaining levels in the region; therefore, elimination or disruption of habitat for these species would not represent a regionally significant impact. As further described in Section 3.C., Biological Resources, the introduction of lighting could be beneficial for insectivorous wildlife species, such as bats and toads, because it attracts and concentrates large numbers of insects on which these species feed. As such, introduction of lighting on the project site would not significantly impact wildlife habitat.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light by highly polished surfaces, such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces. As the proposed structures would be designed to use materials that are non-reflective, such as concrete blocks, log columns, boards and batten, glare impacts would be reduced to a minimum. As such, the proposed project is not anticipated to have any significant impacts associated with light and glare.

4. **CUMULATIVE IMPACTS**

Other related projects are located sufficiently distant from the project site and would, therefore, not contribute to any significant cumulative impacts to aesthetics and visual quality. The combined change from the proposed project and other projects in the area would not significantly impact the experience of motorists traveling along Highway 189 and other highways in the forested areas of this mountain community of the County. In addition, each of the cumulative projects would be subject to the project and permit approval process. As such, no significant cumulative impact to aesthetic, scenic views, and light and glare would occur.

5. MITIGATION MEASURES

MM-A1(a) To reduce the significant aesthetic impact along Highway 189 and the public hiking trails located near the northeastern portion of the project site, replacement trees that are at least 12 inches in diameter and endemic to the mountain region shall be planted along the western and southern boundaries of the project site to provide additional screening of proposed structures and parking lots from public views.

MM-A1(b) Prior to issuance of grading permits, site plan review shall be conducted with special consideration of building and structure heights and setbacks, natural setback areas/buffer zones, and parking lot design and placement. Design requirements shall be established to address architectural treatment, retaining walls, colors, and materials to ensure that proposed structures blend in with the natural environment to the maximum extent feasible. The landscape plan for the project shall also be reviewed relative to tree preservation efforts and opportunities to provide replacement trees and plant materials that are endemic to the mountain region to help screen parking areas and the fort building from motorists along Highway 189.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project would have significant aesthetic and view impacts. The mitigation measures identified above could over time provide additional screening of the project components located along Highway 189, including the fort building, parking lots, and staff cabins. However, even with the above mitigation measures views of these areas along Highway 189 would still be prominent and impacts on aesthetics and views would not be reduced to less-than-significant levels. As such, a significant unavoidable impact on aesthetics and views would occur along Highway 189.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES B. AIR QUALITY

This section provides a discussion of existing air quality within the region and the project area and analyzes potential impacts associated with implementation of the proposed project. Potential short-term and long-term air quality emissions associated with the proposed project are assessed with respect to federal and State ambient air quality standards and local agency rules and regulations. This analysis is primarily based on air quality technical data contained in a Focused Air Quality Study prepared by Synectecology. The study is included as Appendix B of this Draft EIR. Supplemental air quality analysis was also conducted by PCR Services Corporation. This report is also included as Appendix B of this Draft EIR.

1. ENVIRONMENTAL SETTING

a. Applicable Plans

In response to longstanding concerns about air pollution, federal, State, and local authorities have adopted various rules and regulations requiring evaluation of the potential air quality impacts of a proposed project and appropriate mitigation to reduce air emissions. The following discussion describes current air quality planning efforts and the responsibilities of the key agencies involved in these efforts.

(1) Federal Clean Air Act

The Federal Clean Air Act (CAA) was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes Federal health-based air quality standards, known as National Ambient Air Quality Standards (NAAQS), for the following criteria pollutants: (1) Ozone (O₃); (2) Nitrogen Dioxide (NO₂); (3) Sulfur Dioxide (SO₂); (4) Particulate Matter (PM₁₀); (5) Carbon Monoxide (CO); and (6) Lead (Pb). Table 5 on page 42 shows the NAAQS currently in effect for criteria pollutants. The NAAQS were amended in July 1997 to include an additional standard for ozone and to adopt a NAAQS for fine particulates (PM_{2.5}).

The CAA also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not

Table 5

AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standard ^a	Federal Primary Standard ^a	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O ₃) 1 hour 8 hours		0.09 ppm —	0.12 ppm 0.08 ppm	High concentrations can directly affect lungs, causing irritation. Longterm exposure may cause damage to lung tissue.	Motor vehicles.
Carbon Monoxide (CO)	Ionoxide 8 hours		35 ppm 9 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide (NO ₂)	Annual Average 1 hour	0.25 ppm	0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddishbrown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide (SO ₂)	Annual Average 1 hour 24 hours	0.25 ppm 0.04 ppm	0.03 ppm — 0.14 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean Annual Geometric Mean 24 hours	20 ug/m ³ — 50 ug/m ³	50 ug/m ³	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
Particulate Matter (PM _{2.5}) ^b	Annual Geometric Mean	12 m g/m ³	15 mg /m ³	Increases respiratory disease, lung damage, cancer, premature death; reduced visibility; surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NO _X , SO _X , organics).

Table 5 (Continued)

AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standard ^a	Federal Primary Standard ^a	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Lead (Pb)	Monthly Quarterly	1.5 ug/m ³ —	 1.5 ug/m ³	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction (in severe cases).	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
Sulfates (SO ₄)	24 hours	25 ug/m ³		Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio- pulmonary disease; vegetation damage; degradation of visibility; property damage.	Industrial processes.

^a ppm=parts per million and $\mu g/m^3 = micrograms$ per cubic meter.

Source: California Air Resources Board, Ambient Air Quality Standards, January 25, 1999.

meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the CAA identify specific emission reduction goals for basins not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones.

The County of San Bernardino is included in the South Coast Air Basin (Basin), which has been designated as a non-attainment area for certain pollutants that are regulated under the CAA. The Basin fails to meet the National standards for O₃, PM₁₀, and CO and therefore is considered a Federal non-attainment area for these pollutants. Non-attainment designations are categorized into four levels of severity based on projected attainment date and level of concentration above the standard including: moderate, serious, severe, and extreme. In addition, the Basin is classified as being in maintenance for NO₂ since it is currently in attainment and measures are being taken to ensure that it does not go back into non-attainment. The CAA sets certain deadlines for meeting the NAAQS within the Basin including: (1) Ozone by the year 2010; (2) PM₁₀ by the year 2006; and (3) CO by the year 2000. The CO attainment deadline of

A Federal air quality standard for PM_{2.5} was adopted in 1997. Presently, no methodologies for determining impacts relating to PM_{2.5} have been developed. In addition, no strategies or mitigation programs for this pollutant have been developed or adopted by federal, state, or regional agencies. Currently, this standard is not enforceable, but may be reinstated in the future. Thus, this air quality analysis does not analyze PM_{2.5}.

December 31, 2000 has not been met and the Basin is still classified as non-attainment for CO. No official determination has been made regarding the attainment status of the new ozone and PM_{2.5} standards. However, selected monitoring stations have already begun analyzing air samples for PM_{2.5}. Deadlines for meeting this standard will be set for 10 years after the region is designated as being in non-attainment by the United States Environmental Protection Agency (USEPA). Table 5 lists the criteria pollutants, along with their respective standards, health and atmospheric effects, and major sources. The Basin's attainment status with regard to each criteria pollutant is shown in Table 6 on page 45.

(2) California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and has set standards for other pollutants recognized by the State. California standards tend to be more restrictive than NAAQS and are based on even greater health and welfare concerns. California has also set standards for PM_{2.5}, sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The Basin does meet the California standards for sulfates, hydrogen sulfide and vinyl chloride, but does not meet the California standard for visibility and is not expected to fully meet the visibility standard until 2010. Table 5 lists the CAAQS and Table 6 displays associated attainment status.

(3) South Coast Air Quality Management District (SCAQMD)

The SCAQMD has been established as the local air pollution control agency in the Basin. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county Basin which includes: Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties, and the Riverside County portions of the Salton Sea Air Basin and Mojave Desert Air Basin. While air quality in this area has improved, 2001 (the latest year for which comprehensive data are available) registering some of the lowest levels of air pollutant concentrations in decades, the Basin requires continued diligence to meet air quality standards.

The SCAQMD has adopted a series of Air Quality Management Plans (AQMP) to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources; control programs for area sources and indirect sources; a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions; transportation control measures; sufficient control strategies to achieve a five percent or more annual reduction in emissions (or 15 percent or more in a three-year period) for Reactive Organic Compounds (ROC), NO_X, CO and PM₁₀; and

Table 6
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Pollutant	National Standards	California Standards
Ozone (O ₃)	Extreme	Extreme
Carbon Monoxide (CO)	Maintenance ^a	Serious
Sulfur Dioxide (SO ₂)	Attainment b	Attainment b
Nitrogen Dioxide (NO ₂) ^b	Maintenance c	Maintenance ^c
PM_{10}	Serious	Serious
$PM_{2.5}$	Pending d	Pending ^d
Lead (Pb)	Attainment b	Attainment b

^a The national standard for CO was achieved for the first time at the end of 2002, and the 2003 AQMP identifies measures necessary to ensure that it does not go back into non-attainment.

Source: California Air Resources Board, 2003.

demonstration of compliance with the California Air Resources Board's established reporting periods for compliance with air quality goals.

The 1997 AQMP, was amended in 1999 and resubmitted to the USEPA, which approved the amended plan in April 2000. The 1999 Amendment provided additional short-term stationary source control measures that implement portions of the 1997 Ozone State Implementation Plan's (SIP) long-term stationary source control measures. In addition, the Amendment revised the adoption and implementation schedule for the remaining 1997 Ozone SIP short-term stationary source control measures that the SCAQMD is responsible to implement.

The 1997 PM_{10} SIP was approved by the California Air Resources Board (CARB) and submitted to the USEPA in February 1997. In order to expedite EPA's action on the 1997 PM_{10} SIP, SCAQMD updated the Plan in 2002 with respect to the adoption and implementation schedule of various PM_{10} related measures. The PM_{10} SIP approval is expected in late 2003.¹²

An air basin is designated as being in attainment for a pollutant if the standard for that pollutant was not violated at any site in that air basin during a three year period.

^c NO₂ is classified as being in maintenance since it is currently in attainment and measures are being taken to ensure that it does not go back into non-attainment.

Attainment status with the $PM_{2.5}$ standard will not be determined until 2004.

¹² South Coast Air Quality Management District, <u>Preview of the Proposed 2003 Air Quality Management Plan for the South Coast Air Basin</u>, January 2003.

The SCAQMD has recently prepared a comprehensive AQMP update – the 2003 Air Quality Management Plan for the South Coast Air Basin. The 2003 AQMP seeks to demonstrate attainment with NAAQS and to make progress toward CAAQS. The 2003 AQMP incorporates a revised emissions inventory, the latest modeling techniques, and updated control measures remaining from the 1997/1999 SIP as well as new control measures.¹³

The SIP component will revise the region's demonstration of attainment for both the National 1-hour ozone standard by 2010 and the National PM_{10} standard by 2006, as well as show maintenance of the National CO standard. Upon local, State, and federal approval, the 2003 Plan will replace the existing 1997/1999 Ozone SIP, 1997 PM_{10} SIP for the Basin, and the 2002 Coachella Valley PM_{10} Plan. The 2003 Plan will use more recent data on air quality, emissions and modeling to assess attainment. It will also include an updated control strategy for both stationary and mobile sources, reflecting new measures for local, State, and federal implementation.

The SCAQMD also adopts rules to implement portions of the AQMP. Several of these rules may apply to construction or operation of the project. Rule 403 (Fugitive Dust) requires the implementation of best available fugitive dust control measures during active operations capable of generating fugitive dust emissions from onsite earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM_{10} concentration impact at the property line of more than 50 micrograms per cubic meter (μ g/m³) as determined through PM_{10} high-volume sampling, but the concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rule are implemented and appropriately documented.

SCAQMD Rule 403 identifies two sets of specific measures: one for high wind conditions and the other for more normal wind conditions. When wind gusts exceed 25 miles per hour, neither the sampling requirement nor the general requirement apply so long as the following measures, detailed in Table 7 on page 47, are implemented and appropriately documented.

During normal wind conditions (i.e., with wind gusts less than 25 miles per hour), the sampling requirement does not apply so long as the following measures shown in Table 8 on page 48 are implemented and appropriately documented.

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 $^{^{13} \}quad South \ Coast \ Air \ Quality \ Management \ District, \ AQMD \ Website, \ http://www.aqmd.govnews1/aqmp/-adopt.htm.$

Table 7 SCAQMD RULE 403 MEASURES FOR HIGH WIND CONDITIONS

Source	Control Measure
Earthmoving	 Cease all active operations; or apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed Surface Areas	 On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days, apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; or
	 Apply chemical stabilizers prior to wind event, or
	 Apply water to all unstabilized disturbed areas 3 times per day. (If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day); or
	• Establish a vegetative ground cover within 21 days after active operations have ceased. (Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all time thereafter); or
	• Utilize any combination of the three measures immediately preceding such that, in total, these actions apply to all disturbed surface areas.
Unpaved Roads	 Apply chemical stabilizers prior to wind event; or apply water twice per hour during active operation; or stop all vehicular traffic.
Open Storage Piles	 Apply water twice per hour; or install temporary coverings.
Paved Road Track-Out	• Cover all haul vehicles; or comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both pubic and private roads.

Source: SCAQMD Rule 403 Implementation Handbook, January 1999.

Finally, SCAQMD Rule 403 requires those engaged in hauling operations to take actions necessary to prevent or remove (within one hour) the track-out of bulk material onto public paved roadways. Alternatively, one may implement these specific actions:

- Pave or apply chemical stabilization at sufficient concentrations and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and a width of at least 20 feet; or
- Pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and a width of at least 20 feet, and install a trackout control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.

Under either specific alternative course of action, the following additional requirements apply:

Source	Control Measure
Earthmoving (except construction cutting and filling areas)	• Maintain soil moisture content at a minimum of 12 percent, or earthmoving which is more than 100 feet from all property lines, watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earthmoving (construction fill areas)	• Maintain soil moisture content at a minimum of 12 percent. For areas which have an optimum moisture content for compaction of less 12 percent, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content.
Earthmoving (construction cut areas)	• Conduct watering as necessary to prevent visible emissions extending more than 100 feet beyond the active cut area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed Surface Areas (except completed stabilized, grading areas)	 Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized as evidenced by wind driven fugitive dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed Surface Areas	• Apply chemical stabilizers within five working days of grading completion; or apply water to at least 80 percent of all inactive surface areas on a daily basis when there is evidence of wind driven fugitive dust, except any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; or establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter.
Inactive Disturbed Surface Areas	• Apply water to at least 80 percent of all inactive disturbed areas on a daily basis when there is evidence of wind driven fugitive dust, except any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; or apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; or establish a vegetative ground cover within 21 days after active operation have ceased (ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter); or utilize any combination of the above three measures such that, in total, these actions apply to all inactive disturbed surface areas.
Unpaved Roads	• Water all roads used for any vehicular traffic at least once per every two hours of active operation; or water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; or apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open Storage Piles	• Apply chemical stabilizers; or apply water to al least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; or install temporary coverings; or install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile.

Source: SCAQMD Rule 403 Implementation Handbook, January 1999.

• Removal of track-out material at anytime it extends for a cumulative distance of greater than 50 feet onto any paved public paved road during active operations; and

• Remove all visible roadway dust track-out upon public paved roadways as a result of active operations at the conclusion of each work day when active operations cease.

In addition to the AQMP and its rules and regulations, the SCAQMD has published a handbook (*CEQA Air Quality Handbook*, November 1993) (Handbook) that is intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. This handbook provides standards, methodologies and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis.

(4) Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated metropolitan planning organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *Regional Comprehensive Plan and Guide* (*RCPG*) for the SCAG region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation components of the AQMP and are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

b. Existing Conditions

(1) Regional Air Quality

The distinctive climate of the Basin is determined primarily by its terrain and geographical location. Regional meteorology is dominated by a persistent high pressure area which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause changes in the weather patterns of the area. Warm summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes, and moderate humidity characterize local climatic conditions. This normally mild climatic condition is occasionally interrupted by periods of hot weather, winter storms, and hot easterly Santa Ana winds.

The Basin is an area of high air pollution potential, particularly from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season and time of day. Ozone concentrations, for example, tend to be lower

along the coast, higher in the near inland valleys and lower in the far inland areas of the Basin and adjacent desert.

Over the past 30 years, substantial progress has been made in reducing air pollution levels in southern California. The Basin previously was in non-attainment for all NAAQS, except SO_2 . The Basin is now in attainment for NO_2 , lead, and SO_2 , with CO approaching attainment. PM_{10} and ozone levels, while reduced substantially from their peak levels, are still far from attainment.

The SCAQMD has published a Basin-wide air toxic study (MATES II, Multiple Air Toxics Exposure Study, March 2000). The MATES II study represents one of the most comprehensive air toxics studies every conducted in an urban environment. The study was aimed at determining the cancer risk from toxic air emissions throughout the Basin by conducting a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize health risks for those living in the Basin. The study concluded that the average carcinogenic risk in the Basin is approximately 1,400 in one million and is based on a range from about 1,200 in one million to about 1,740 in one million among ten monitoring stations throughout the Basin. Therefore, there is an inherent health risk associated with living in urbanized areas of Southern California, where mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors to the overall risk. About 70 percent of all risk is attributed to diesel particulate emissions; about 20 percent to other toxics associated with mobile sources, (including benzene, butadiene, and formaldehyde); and about 10 percent of all carcinogenic risk is attributed to stationary sources (which include industries and other certain businesses such as dry cleaners and chrome plating operations).

(2) Local Air Quality

Existing Pollutant Levels at Nearby Monitoring Stations

The SCAQMD monitors air quality throughout the Basin at various monitoring stations. The project site is located within Source Receptor Area Number 37 (Central San Bernardino Mountains), which is served by the Lake Arrowhead air monitoring station, located along Highway 18, in the County of San Bernardino. The Lake Arrowhead monitoring station is approximately 1.5 miles from the project site at an elevation of approximately 6,000 feet. The station was primarily added to the monitoring network to aid in the scientific understanding of O₃ transport. PM₁₀ monitoring was discontinued at this location after year 2000 because concentrations were well below established NAAQS and CAAQS. All other criteria pollutants (i.e., CO, NO₂, and SO₂) have not historically been monitored at this station. The closest current station monitoring PM₁₀ is the Central San Bernardino Valley 1 station located in the City of

Fontana. This is also the nearest and most representative station monitoring NO₂, SO₂, and PM_{2.5}. The nearest CO air monitoring station is the Central San Bernardino Valley 2 station located northeast of the City of Colton. The most recent data available from these monitoring stations encompassed the years 1997 to 2001. The data, shown in Table 9 on page 52, shows the following pollutant trends:

Ozone (O_3) – The maximum 1-hour ozone concentration recorded during the five year monitoring station reporting period was 0.20 ppm (1998). During this reporting period, the California standard of 0.09 ppm was exceeded between 26 and 69 times annually. The National standard of 0.12 ppm was exceeded between 12 and 39 days annually during the reporting period, with the maximum number of exceedances occurring in 2001. The maximum 8-hour ozone concentration recorded during the reporting period was 0.17 ppm (1998). During this reporting period, the National standard of 0.08 ppm was exceeded between seven and 40 times with the maximum number of exceedances occurring in 1998.

Carbon Monoxide (**CO**) – The maximum recorded 1-hour concentration during the reporting period was 8 ppm (1997). During this reporting period, there were no exceedances of the California or National 1-hour CO standards. The maximum recorded 8-hour CO concentration was 6.0 ppm, recorded in 1997. The California and National standards, which are both 9.0 ppm and 9 ppm, respectively, for the 8-hour average, were not exceeded during the reporting period.

Nitrogen Dioxide (NO_2) – The highest recorded 1-hour concentration of NO_2 during the reporting period was 0.15 ppm (1998-1999) and the highest recorded annual arithmetic mean during the reporting period was 0.0388 (1999). Neither the California nor National NO_2 standard was exceeded during the reporting period.

Sulfur Dioxide (SO_2) – The highest recorded 1-hour concentration of SO_2 during the reporting period 1997 to 2001 was 0.08 ppm (2001). The highest recorded 24-hour concentration was 0.010 ppm (1998-2001). No violations of the California or National SO_2 standards were recorded during this reporting period. The highest annual arithmetic mean recorded was 0.0018 ppm in 1999 and 2000 which is well below the 0.03 ppm federal standard.

Particulate Matter (PM_{10}) – The highest recorded concentration during the reporting period was 49 micrograms per cubic meter ($\mu g/m^3$) of air particulates (2000). Neither the California nor federal PM_{10} standard was exceeded during this time period. PM_{10} is monitored every six days coincident with a National schedule.

Table 9

LOCAL AIR MONITORING STATIONS ANNUAL SUMMARY

Pollutant/Standard	1997	1998	1999	2000	2001
Ozone (O ₃) ^a					
O ₃ (1-Hour)					
Maximum Concentration (ppm)	0.17	0.20	0.14	0.17	0.18
Days > CAAQS (0.09 ppm)	69	60	26	36	55
Days $>$ NAAQS (0.12 ppm)	12	30	16	16	39
O ₃ (8-Hour)					
Maximum Concentration (ppm)	0.13	0.17	0.10	0.14	0.14
Days > NAAQS (0.08 ppm)	30	40	4	7	18
Particulate Matter (PM ₁₀) ^a					
<u>PM₁₀ (24-Hour)</u>					
Maximum Concentration (μg/m³)	47	45	47	49	
Percent of Samples > CAAQS (50 μ g/m ³)	0.0	0.0	0.0	0.0	
Percent of Samples > NAAQS (150 μ g/m ³)	0.0	0.0	0.0	0.0	
PM ₁₀ (Annual Average)					
Annual Arithmetic Mean (50 μg/m ³)	24	25	27	24	
Annual Geometric Mean (20 µg/m³)	21	21	24	21	
Particulate Matter (PM _{2.5}) ^b					
PM _{2.5} (24-Hour)					
Maximum Concentration (μg/m³)	n/a	n/a	98	90	75
Percent of Samples > NAAQS (65 μ g/m ³)	n/a	n/a	3	2.9	3.5
PM _{2.5} (Annual)					
Annual Arithmetic Mean (15 μg/m ³)	n/a	n/a	26	25	25
Carbon Monoxide (CO) ^c					
<u>CO (1-Hour)</u>					
Maximum Concentration (ppm)	8	6	5	5	4
Days > CAAQS (20 ppm)	0	0	0	0	0
Days > NAAQS (35 ppm)	0	0	0	0	0
<u>CO (8-Hour)</u>					
Maximum Concentration (ppm)	6.0	4.6	4.0	4.3	3.3
Days > CAAQS (9.0 ppm)	0	0	0	0	0
Days > NAAQS (9 ppm)	0	0	0	0	0
J V II /	-	-	-	-	-

Table 9 (Continued)

LOCAL AIR MONITORING STATIONS ANNUAL SUMMARY

Pollutant/Standard	1997	1998	1999	2000	2001
Nitrogen Dioxide (NO ₂) b					
<u>NO₂ (1-hour)</u>					
Maximum Concentration (ppm)	0.14	0.15	0.15	0.12	0.13
Days > CAAQS (0.25 ppm)	0	0	0	0	0
NO ₂ (Annual)					
Annual Arithmetic Mean (0.053 ppm)	0.037	0.036	0.039	0.036	0.036
Sulfur Dioxide (SO ₂) ^b					
<u>SO₂ (1-hour)</u>					
Maximum Concentration (ppm)	0.01	0.02	0.01	0.02	0.08
Days > CAAQS (0.25 ppm)	n/a	n/a	0.0	0.0	0.0
<u>SO₂ (24-hour)</u>					
Maximum Concentration (ppm)	0.01	0.01	0.01	0.01	0.01
Days > CAAQS (0.04 ppm)	0	0	0	0	0
Days > N AAQS (0.14 ppm)	0	0	0	0	0
SO ₂ (Annual)					
Annual Arithmetic Mean (0.03 ppm)	0.001	0.001	0.002	0.002	n/a

 $ppm = parts \ per \ million; \ mg/m^3 = micrograms \ per \ cubic \ meter; \ AAM \ Annual \ Arithmetic \ Mean; \ n/a = not \ available$

Note: Ambient data for airborne lead is not included in this table since the Basin is currently in compliance with state and national standards for lead.

Source: South Coast Air Quality Management District, Air Quality Data 1997-2001.

Fine Particulates (PM_{2.5}) – PM_{2.5} concentrations of 98, 90, and 75 μ g/m³ were recorded for the years 1999, 2000 and 2001, respectively. During these two years the National standard was exceeded between 2.9 and 3.5 percent of the time annually.

Lead (**Pb**) – The Basin is currently in compliance with California and National standards for lead and, therefore, no ambient data for airborne lead is available for the applicable monitoring stations.

Data presented for O_3 and PM_{10} is from the Central San Bernardino Mountains Monitoring Station. PM_{10} monitoring at this Station was stopped after 2000. Ambient data for fine particulate matter ($PM_{2.5}$) was not available prior to 1999.

Data presented for $PM_{2.5}$, NO_2 , and SO_2 is from the Central San Bernardino Valley 1 Monitoring Station. Ambient data for $PM_{2.5}$ was not available prior to 1999.

^c Data presented for CO is from the Central San Bernardino Valley 2 Monitoring Station.

Existing Health Risk in the Surrounding Area

According to the SCAQMD's MATES-II study, the Lake Arrowhead area of San Bernardino County is within a cancer risk zone of 400 to 600 in one million and is largely due to diesel particulate emanating from mobile sources in the San Bernardino Valley. The cancer risk is approximately 57 to 71 percent less than the average cancer risk in the Basin of 1,400 per million.

2. THRESHOLDS OF SIGNIFICANCE

The County of San Bernardino has not adopted specific Countywide significance thresholds for air quality impacts. The screening criteria, significance thresholds and analysis methodologies in the Handbook serve as the primary basis for evaluating project impacts. The SCAQMD has promulgated daily emission thresholds for construction and operational activities. The SCAQMD thresholds are set at a level that either promote or maintain regional attainment of the relevant ambient air quality standards. A project is deemed to have a significant impact on regional air quality if emissions of criteria pollutants (specified in pounds of pollutant emitted per day) related to either project construction or operation exceed the significance thresholds summarized in Table 10 on page 55.

The Handbook also provides additional indicators to be used as screening criteria indicating the need for further analysis with respect to air quality. Whenever possible, a project should be evaluated in a quantitative analysis; otherwise a qualitative analysis is appropriate. Based on a review of the screening criteria indicators described above, the following additional SCAQMD significance thresholds are provided.

- The project causes an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 parts per million (ppm), respectively, at an intersection or roadway within one-quarter mile of a sensitive receptor.
- The project emits carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million above background risk levels.
- On-site hazardous materials result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.
- The project is within a quarter mile of an existing facility that emits air toxics that results in a maximum individual cancer risk of ten in one million.

Table 10
SCAQMD REGIONAL SIGNIFICANCE THRESHOLDS

Air Contaminant	Construction (Pounds per day)	Post-Construction Operations (Pounds per Day)
Carbon Monoxide	550	550
Nitrogen Oxides	100	55
Reactive Organic Compounds	75	55
Particulate Matter	150	150
Sulfur Oxides	150	150

Source: South Coast Air Quality Management District, CEQA Air Quality Handbook, November 1993.

- The project creates objectionable odors.
- The project would not be compatible with SCAQMD and SCAG air quality polices if the project:
- causes an increase in the frequency or severity of existing air quality violations;
 - causes or substantially contributes to new air quality violations;
 - delays timely attainment of air quality standards or the interim emission reductions specified in the AQMP; or
 - exceeds the assumptions utilized in the SCAQMD's AQMP.
- The project would not be consistent with the County of San Bernardino air quality policies if it does not substantially comply with the air quality goals and policies set forth within the County's General Plan.

3. ENVIRONMENTAL IMPACTS

a. Methodology

Construction emissions were estimated using calculation formulas and emissions factors prescribed by the Handbook, URBEMIS, and MVEI7G (including EMFAC7G and Burden 7G). While many of the URBEMIS model assumptions were used, the calculations were performed manually as presented in Appendix B of this Draft EIR. This worst-case analysis assumed that grading and construction equipment would be diesel-powered and would operate simultaneously for eight hours per day for general construction. Assumptions regarding the type and amount of equipment anticipated to be used is provided in Appendix B of this Draft EIR.

The project's long-term regional operational air emissions would include emissions from increased fossil fuel combustion in power plants to produce electrical energy, on-site combustion of natural gas used for cooking and heating, the use of campfires and woodstoves for cooking and social activities, and daily vehicle trips. Electricity and natural gas emissions were estimated using Table A9-11-A and A9-12-A of the Handbook, respectively. Project emissions for woodstoves and open fires were calculated using the United States Environmental Protection Agency's AP-42, *A Compilation of Air Pollution Emission Factors*. Table 13.1-2 of AP-42 provides emission factors for wildfire combustion with factors applicable to California. The analysis assumed two fires per day would be produced for every 20 campers resulting in 105 campfires and cook stoves. Twenty pounds of wood per fire was assumed resulting in 2,100 pounds consumed on a peak day. Mobile source emissions were calculated using CARB's EMFAC2002 model, including Burden. As indicated in the Traffic Analysis prepared by Urban Crossroads, the project would result in 20 bus trips and 143 auto/van trips per day. Each trip end was assumed to be 50 miles to account for the project's remote location.

The project's long-term local CO operational air emissions were projected using the CALINE-4 traffic pollutant dispersion model developed by the California Department of Transportation. The CALINE-4 analysis used peak-hour traffic volumes and worst-case meteorological assumptions. Worst-case meteorological conditions include low wind speed, stable atmospheric conditions, and the wind angle producing the highest CO concentrations for each case. To demonstrate the potential for the project to create a hotspot, modeling was performed using modified procedures outlined in the *Transportation Project-Level Carbon Monoxide Protocol* developed by the University of California, Davis Institute of Transportation Studies on behalf of the CARB (December 1997). As a worst-case scenario, the analysis included volumes for existing plus ambient growth traffic then added the project traffic volumes using the existing lane configurations. The proposed traffic mitigation measures for intersection improvements were not included in the analysis. Any measure that would reduce congestion would be expected to result in reduced CO concentrations.

The calculated construction and operations emissions of the project were compared to thresholds of significance for individual projects stated in the Handbook. In addition, as recommended by the Handbook, emissions of reactive organic compounds (ROC) and nitrogen oxides (NO_X) were assessed as indicators of potential impacts for O_3 .

b. Analysis of Air Quality Impacts

(1) Construction

B-1. Regional Construction Impacts. Daily construction emissions for NO_X and ROC are expected to exceed SCAQMD daily significance thresholds. This is a *Potentially Significant Impact*.

Construction of the proposed project would generate air pollutant emissions from the following activities: (1) the commute of workers to and from the project site; (2) delivery and hauling of construction materials and supplies to and from the project site; (3) fuel combustion by on-site construction equipment; (4) dust generating activities from soil disturbance; and (5) the application of architectural coatings and other building materials. To define the "worst-case" condition from an air pollution emissions perspective, the analysis of construction-related emissions assumed that thirteen acres of the 50 acre site would be developed. As further described in Chapter 2, Project Description, construction would include a 248-bed dormitory, tent camping sites, staff cabins, one large (1,000-seat) and one small (300-seat) amphitheater, camping circles, rope apparatus courses, bike and nature trails, gun and archery ranges, pools, and recreational courts.

Emission levels from construction activities are dependent on the type of equipment, duration of use, operation schedules, and number of construction workers. Table 11 on page 58 presents the construction emissions for the proposed project. As shown in Table 11, CO, SO_X, and PM₁₀ daily construction emissions are not anticipated to exceed SCAQMD daily significance thresholds. However, NO_X and ROC daily construction emissions are expected to exceed the SCAQMD daily significance thresholds. Therefore, daily construction emissions associated with NO_X and ROC represent a potentially significant short-term impact.

B-2. Construction Toxic Air Contaminant Impacts. Construction emissions for toxic air contaminants are not expected to exceed SCAQMD daily significance thresholds. Therefore, this is considered *a Less-Than-Significant Impact*.

The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the project would not result in a long-term (i.e., 70 years) substantial source of TAC emissions and

Table 11

MAXIMUM DAILY CONSTRUCTION EMISSIONS

Estimated Emissions (lbs/day)

				(=15.07, 42.01)	
Phase	_ <u>CO</u>	ROC	NO_X	SO_X	PM_{10}
SITE GRADING					
Track Loaders	3.2	1.5	13.3	1.2	0.9
Wheel Loaders	9.2	3.7	30.4	2.9	2.7
Motor Graders	2.4	0.6	11.4	1.4	1.0
Water Truck (Miscellaneous)	10.8	2.4	27.1	2.3	2.2
Worker Trips	63.8	6.3	8.8	0.0	0.2
Haul Trucks	15.6	2.0	18.4	1.2	1.0
Dust (Grading)	_	_	_	_	32.5^{a}
Asphalt Degassing	_	_	_	_	_
Architectural Coatings		_	_		_
Total	105	16.5	109.4	9	40.5
Daily Significance Threshold	550	75	100	150	150
Significant Impact?	No	No	Yes	No	No
GENERAL CONSTRUCTION					
Track Loaders	1.6	0.8	6.6	0.6	0.5
Wheel Loaders	4.6	1.8	15.2	1.5	1.4
Motor Graders	5.4	0.3	5.7	0.7	0.5
Water Truck (Miscellaneous)	63.8	1.2	13.5	1.1	1.1
Worker Trips	15.6	6.3	8.8	0.0	0.2
Haul Trucks	_	2.0	18.4	1.2	1.0
Dust (Grading)		_	_	_	16.3
Asphalt Degassing	_	0.5	_		_
Architectural Coatings	_	229.0	_		_
Total	91	241.9	68.2	5.1	21.0
Daily Significance Threshold	550	75	100	150	150
Significant Impact?	No	Yes	No	No	No
<u>*</u>					

Note: All assumptions, which include equipment mix, emission factors, and calculation formulas, are detailed in Appendix B.

Source: Synectecology, February 2003.

corresponding individual cancer risk and, therefore, project-related toxic emission impacts would be less than significant.

^a Includes 50 percent reduction for standard dust control measures as required under SCAQMD Rule 403.

B-3. Construction Odor Impacts. Construction emissions for odors are not expected to exceed SCAQMD daily significance thresholds. Therefore, this is considered a *Less-Than-Significant Impact*.

Potential sources that may emit odors during construction activities include the application of architectural coatings and use of solvents. SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents. Through mandatory compliance with SCAQMD Rules, potential impacts related to odors during construction would be less than significant.

(2) Operations

B-4. Regional Operation Impacts. Project operational emissions associated with vehicular traffic, wood stoves, open fires and other stationary sources would not exceed SCAQMD daily significance thresholds. This is a *Less-Than-Significant Impact*.

Operation of the proposed project would generate pollutant emissions from mobile and stationary sources. Mobile sources would include vehicular traffic from camp patrons and employee travel. Stationary source emissions would be generated from wood stoves and open fires as well as the combustion of natural gas to meet the heating demand of the proposed project. In addition, stationary emissions resulting from electrical energy demand would occur off-site at electrical power generating plants assumed to be within the Basin. A detailed discussion of these potential emissions is provided in Appendix B of this Draft EIR.

As further described in Chapter 2.0, Project Description, the initial phase of the project is assumed to be completed by the end of Year 2004 with a capacity for 300 campers. However, the project would not accommodate full capacity until Year 2010 with 1,048 camp occupants. Operational emissions for full project buildout are provided in Table 12 on page 60. Modeling assumptions and calculations are provided in Appendix B, Supplemental Air Quality Analysis. As shown, the project's buildout emissions are not expected to exceed SCAQMD daily significance thresholds for CO, ROC, PM₁₀, NO_X, or SO_X; therefore, potential impacts associated with these pollutants would be less than significant.

Table 12

PROJECT BUILDOUT PEAK DAY OPERATIONAL EMISSIONS (Pounds per Day) ^a

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Mobile Sources					
Autos/Vans and Buses	86	9	<1	8	<1
Buses	34	27	<1	4	<1
Stationary Sources					
Natural Gas	<1	1	0	<1	0
Electricity	<1	4	<1	0	<1
Campfires/Cook Stoves	156	5	19	27	<1
Total	277	46	20	39	1
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	(273)	(9)	(130)	(16)	(149)

^a Numbers may not add correctly due to rounding. Mobile emissions source: PCR Services, May 2003.

Stationary emission source: Synectecology, February 2003.

B-5. Local CO Operation Impacts. Daily vehicle emissions for CO are not expected to exceed SCAQMD daily significance thresholds at any intersection. This is considered a *Less-Than-Significant Impact*.

During the operational phase of the project, traffic would have the potential for local area CO impacts. The intersections expected to be most affected by project traffic were selected for analysis to determine the potential for the creation of CO impacts (hotspots). Modeling assumptions and calculations are provided in Appendix B, Supplemental Air Quality Analysis.

The results of CO analysis for project build-out are shown in Table 13 on page 61. The results indicate that project-related traffic is not predicted to cause a violation of the 1-hour or 8-hour standard. Therefore, potential CO impacts would be less than significant.

B-6. Local O₃ Impacts. The project is located in an area subject to exceedance of applicable O₃ standards. Camp occupants of a young age may be susceptible to health effects during smog alerts and periods of high pollutant concentrations if they are engaged in strenuous physical activities. This is considered a *Potentially Significant Impact*.

As noted in Table 9, the San Bernardino Mountain area is subject to numerous days that exceed the applicable ozone standards. The O₃ standards are most often exceeded in summer and fall months when atmospheric chemistry and wind conditions are conducive to forming and transporting ozone to the project area. Elevated O₃ concentrations are known to cause lung

 ${\bf Table~13}$ ${\bf ESTIMATED~PROJECT~BUILDOUT~(2010)~MAXIMUM~CO~CONCENTRATIONS~}^a$

Modeled Intersection	Time Period	Averaging Period	Future Without Project	Future With Project	Increment	Project Impact
Lake Gregory Drive and	Weekday	1-Hour	6.1	6.5	0.4	No
Highway 18	P.M.	8-Hour	4.2	4.3	0.1	No
Lake Gregory Drive and	Weekend	1-Hour	4.7	4.9	0.2	No
Highway 18	P.M.	8-Hour	3.5	3.6	0.1	No
Daley Canyon Road @	Weekday	1-Hour	4.9	5.0	0.1	No
Highway 189	P.M.	8-Hour	3.5	3.6	0.1	No
Daley Canyon Road @	Weekend	1-Hour	4.6	4.6	0.0	No
Highway 189	P.M.	8-Hour	3.4	3.4	0.0	No
Highway 18 and Highway 18	Weekend	1-Hour	4.4	4.5	0.1	No
Bypass	P.M.	8-Hour	3.3	3.3	0.0	No

Note: The state 1-hour average CO standard is 20 ppm; the state and federal 8-hour average CO standard is 9.0 ppm.

Source: PCR Services, June 2003.

irritation for short-term exposure and lung tissue damage for long-term exposure. Ozone exposure is at it's highest during physical activities when a person's breathing rate is increased. Children, the elderly, asthmatics, and the infirm are most susceptible to the health effects of O_3 . Young campers will be participating in strenuous physical activities (e.g., basketball, field hockey, volleyball and mountain biking) throughout the year. Strenuous exercising causes children to breathe in more air, therefore, bringing more air pollution deep into the lungs. Thus, sensitive campers at the project site may be exposed to unhealthy levels of O_3 during summer or fall months. As such, the potential impacts associated with the health effects of O_3 on children are considered potentially significant without incorporation of mitigation measures.

B-7. Air Toxic Operation Impacts. Emissions of air toxics during project operations are not expected to exceed SCAQMD daily significance thresholds. Therefore, this is considered *a Less-Than-Significant Impact*.

According to the Handbook, land uses associated with toxic emissions include industrial, manufacturing, and commercial land uses such as gas stations and dry cleaning processing facilities (i.e., use of perchloroethylene on-site). Although these types of land uses would not occur on the project site, potential sources of air toxic emissions associated with project development include, but may not be limited to, diesel particulates from buses as well as small amounts of toxics from consumer household products (e.g., detergents, cleaning compounds,

^a As measured at a distance of ten feet from the corner of the intersection predicting the highest value. CO values include background concentrations of 3.6 and 2.9 ppm for 1- and 8-hour concentrations, respectively. Eight-hour concentrations are based on the persistence factor of 0.7 of the 1-hour concentration.

glues, polishes, floor finishes, cosmetics, perfume, antiperspirants, rubbing alcohol, room fresheners, car wax, paint and lawn care products). These sources would contribute small amounts of toxic air pollutants to the project vicinity that would be well below levels that would result in a significant impact on human health.

An assessment of potential accidental releases of air toxic emissions or acutely hazardous materials posing a threat to public health and safety was also conducted. The project would only have limited amounts of hazardous materials on site, primarily related to consumer products. These products are expected to be used in accordance with manufactures specifications for safe use, and any accidental release of air toxic emissions or acutely hazardous materials associated with such products would not pose a threat to general public health and safety. Therefore the project would have no impact related to the accidental release of air toxics or acutely hazardous materials.

In addition to the analysis of potential on-site sources of air toxics, an analysis was also conducted to determine whether the proposed project would result in the siting of sensitive receptors within a quarter mile of existing off-site sources of toxic air contaminants that would result in a significant health impact. The project has been analyzed using screening procedures identified in Chapter 5 of the Handbook. Based on this screening analysis, which included an EPA and ARB database search as well as a field reconnaissance of the project vicinity, no sources of toxic air contaminants were identified that would result in levels of air toxics that would emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million. As such, project development would have a less-than-significant impact on human health.¹⁴ Also, according to the SCAQMD's MATES-II study, the cancer risk in the project vicinity is approximately 400 to 600 in one million, which is approximately 57 to 71 percent lower than the average cancer risk in the Basin of 1,400 per million.

B-8. Odor Operational Impacts. Emissions of odors during project operations are not expected to exceed SCAQMD daily significance thresholds as the project does not include uses associated with odor complaints. Therefore, *no impact* would occur.

According to the Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not

¹⁴ EPA's Environmental Mapper of potential Superfund Sites, Hazardous Waste, Toxic Releases, and Air Emissions (http://www.epa.gov/enviro/html/em/index.html) and ARB's Facility Search for Emissions Inventory of Air Toxics (http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php).

include any uses identified by the SCAQMD as being associated with odors. Therefore, the project would not create adverse odors as discussed above and would have no impact related to objectionable odors.

(3) Consistency with Adopted Plans and Policies

The SCAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which the Basin is in non-attainment (i.e., O₃, CO, and PM₁₀). The project would be subject to the SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by the SCAG.

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment.¹⁵ With regard to air quality planning, SCAG has prepared the RCPG, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation control portions of the AQMP, and are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. Both the RCPG and AQMP are based, in part, on projections originating with the San Bernardino County General Plan. Since the proposed project is consistent with the land use designations of the San Bernardino County General Plan, the project is also consistent with the region's AQMP. Therefore, the project is not anticipated to conflict with or obstruct implementation of the AQMP. With regard to AQMP consistency, no further analysis is required or recommended.

4. **CUMULATIVE IMPACTS**

The SCAQMD has set forth both a methodological framework as well as significance thresholds for the assessment of a project's cumulative air quality impacts. The SCAQMD's methodology differs from the cumulative impacts methodology employed elsewhere in this Draft EIR, in which foreseeable future development within a given service boundary or geographical area is predicted and associated impacts measured. The SCAQMD's approach for assessing cumulative impacts is based on the SCAQMD's Air Quality Management Plan forecasts of attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts, taking into account SCAG's forecasted future regional growth and

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¹⁵ SCAG serves as the federally designated metropolitan planning organization (MPO) for the southern California region.

determining whether the project is consistent with the forecasted future regional growth. Therefore, if all cumulative projects are individually consistent with the growth assumptions upon which the SCAQMD's AQMP is based, then future development would not impede the attainment of ambient air quality standards and a significant cumulative air quality impact would not occur. Cumulative air quality impacts for the project consistent with the SCAQMD's methodology, were evaluated in the context of San Bernardino County as a whole for Year 2020 for long-range planning.

Based on the SCAQMD's methodology (presented in Chapter 9 of the Handbook), a project would have a significant cumulative air quality impact if the ratio of daily project employee vehicle miles traveled to daily countywide vehicle miles traveled exceeds the ratio of daily project employees to daily countywide employees. An assessment of the project's cumulative impacts associated with project build-out is presented in Table 14 on page 65. Cumulative impacts were analyzed for year 2020 for permanent project employees, temporary project employees, and total project employees. As shown, the project employee-related rate of growth in vehicle miles traveled is not greater than the project-related rate of growth in employment. Therefore, the project would not have a significant cumulative impact on air quality.

With respect to localized cumulative impacts, a CO hot spot analysis was performed for Year 2020 for long-range planning. The results of this analysis presented in Table 15 on page 66 show that no local intersections are projected to exceed ambient air quality standards and the project does not result in a cumulatively significant impact in this respect. Ozone is another pollutant of cumulative concern. As long as O_3 concentrations remain elevated at the project site, caution should be taken to protect the health of campers. The project would not result in a cumulatively significant O_3 impact if physical activities are limited on days of high ozone concentrations.

5. MITIGATION MEASURES

The following mitigation measures set forth a program of air pollution control strategies designed to reduce the project's air quality impacts

a. Construction

NO_X emissions are projected to exceed the SCAQMD's significance threshold. Therefore, mitigation is warranted to reduce NO_X emissions to less-than-significant levels. The impact analysis assumed eight pieces of equipment, operating 8 hours per day for site grading,

Table 14

PROJECT CUMULATIVE AIR QUALITY IMPACTS

Daily Vehicle Miles Traveled for Permanent Project Employment ^a	177
Daily Vehicle Miles Traveled Countywide b	402,116,000
Daily Vehicle Miles Traveled Ratio	0.0000004
Permanent Project Employment ^a	14
Countywide Employment ^c	1,007,023
Employment Ratio	0.00001
Significance Test – Daily Vehicle Miles Traveled Ratio Greater than	No
Employment Ratio	
Daily Vehicle Miles Traveled for Temporary Project Employment ^a	1,943
Daily Vehicle Miles Traveled Countywide b	402,116,000
Daily Vehicle Miles Traveled Ratio	0.000005
Temporary Project Employment ^a	82
Countywide Employment ^c	1,007,023
Employment Ratio	0.00008
Significance Test – Daily Vehicle Miles Traveled Ratio Greater than	No
Employment Ratio	
Daily Vehicle Miles Traveled for Total Project Employment ^a	2,120
Daily Vehicle Miles Traveled Countywide ^b	402,116,000
Daily Vehicle Miles Traveled Ratio	0.000006
Total Project Employment ^a	96
Countywide Employment ^c	1,007,023
Employment Ratio	0.0001
Significance Test – Daily Vehicle Miles Traveled Ratio Greater than	No
Employment Ratio	

^a Increase of employment and vehicle miles traveled as a result of the project is based on the project Traffic Impact Analysis, prepared by Urban Crossroads, Inc. (included as Appendix G to this Draft EIR). Data obtained from URBEMIS 2001.

Source: PCR Services Corporation, May 2003.

which is equivalent to 64 equipment-hours per day. The following mitigation measures shall be implemented to reduce NO_X emissions:

- **MM-B1(a)** Total daily heavy equipment use shall not exceed an aggregate of 52 hours.
- **MM-B1(b)** Heavy equipment shall not be left idling except when engaged in active construction.
- **MM-B1(c)** The construction supervisor shall keep on-site records of heavy equipmentuse for County review.

b Data obtained from EMFAC 2002.

^c Data obtained from SCAG's Regional Transportation Plan, Socioeconomic Projections, April 1998.

 ${\bf Table~15}$ ${\bf ESTIMATED~CUMULATIVE~MAXIMUM~CO~CONCENTRATIONS~}^a$

Modeled Intersection	Averaging Period	Future Without Project (2020)	Future With Project (2020)	Increment	Project Impact
Lake Gregory Drive and	1-Hour	4.4	4.7	0.3	No
Highway 189	8-Hour	3.5	3.7	0.2	No
Lake Gregory Drive and	1-Hour	6.1	6.1	0.0	No
Highway 18	8-Hour	4.7	4.7	0.0	No
Daley Canyon Road @	1-Hour	5.8	5.8	0.0	No
Highway 189	8-Hour	4.4	4.4	0.0	No
Highway 18 By-Pass and	1-Hour	4.5	4.5	0.0	No
Highway 18	8-Hour	3.5	3.5	0.0	No

Note: The state 1-hour average CO standard is 20 ppm; the state and federal 8-hour average CO standard is 9.0 ppm.

Source: Synectecology, February 2003 and PCR Services Corporation, 2003.

ROC emissions are projected to exceed the SCAQMD's threshold. Therefore, mitigation measures are warranted to reduce emissions to the extent reasonable and feasible. The following mitigation measures shall be implemented to reduce ROC emissions:

- **MM-B1(d)** All primers shall contain less than 0.85 pound per gallon (102 gram/liter) VOC.
- **MM-B1(e)** All paint top coats shall contain less than 0.07 pound per gallon (8 gram/liter) VOC.
- **MM-B1(f)** Heavy equipment operations shall not occur simultaneously with the application of paints and coatings.

b. Operation

The provided mitigation measures would limit the effects of ozone on the children that would use the facility as a result of project implementation.

MM-B6(a) The camp supervisor(s) shall avoid or reduce to the maximum extent feasible strenuous physical activities (e.g. basketball, field hockey,

^a As measured at a distance of ten feet from the corner of the intersection predicting the highest value. CO values include background concentrations of 3.6 and 2.9 ppm for 1- and 8-hour concentrations, respectively. Eight-hour concentrations are based on the persistence factor of 0.7 of the 1-hour concentration.

volleyball and mountain biking) during summer and fall afternoons in the peak ozone periods (i.e., between 2:00 p.m. and 5:00 p.m.) for all campers.

MM-B6(b) The camp supervisor(s) shall consult published SCAQMD forecasts (1-800-CUT-SMOG or http://ozone.aqmd.gov/smot/forecast.html; SRA Monitoring Station 37 Central San Bernardino Mountains) in the summer and fall when camp is in session in order to prohibit strenuous physically activities (e.g. basketball, field hockey, volleyball and mountain biking) during local smog alert days.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Construction

The analysis indicated that grading with eight pieces of equipment for eight hours each day would result in approximately 109 pounds per day of NO_X emissions, which is above the SCAQMD threshold. Reducing construction activity to 52 hours of aggregate equipment use per day would reduce emissions to approximately 99 pounds per day, which is below the threshold and less than significant. The reduction is based on reducing the operating hours for the least polluting piece of equipment (i.e., the truck loaders). If the reduction in hours is associated with other pieces of heavy equipment used in the analysis, the residual emissions would be further reduced.

The 229.0 pound-per-day value presented in Table 11 on page 58 is based on coatings having a VOC content of 250 grams per liter. There are primers available that have VOC contents of less than 0.85 pound per gallon (e.g., deluxe professional exterior primer 100 percent acrylic) and top coats that have less than 0.07 pound per gallon (8 gm/liter) (e.g. lifemaster 2000-series). Assuming two coats of primer and one top coat, the mitigation would result in an average VOC content of about 71 grams per liter and emissions would be reduced from 229 to 46 pounds per day. This would result in ROC emissions that would be reduced to less than significant. Restrictions for simultaneous heavy equipment operation to reduce exhaust emissions, as well as the workers being restricted from allowing equipment to idle when equipment is not in use, would further reduce the residual impact for ROC emissions.

b. Operation

The provided mitigation would limit the effects of ozone on the children that would use the facility as a result of project implementation to a level that is less than significant.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES C. BIOLOGICAL RESOURCES

The scope of this assessment encompasses the comprehensive documentation of existing biological resources on the project site including sensitive species and jurisdictional determinations. An initial analysis was conducted by Natural Resources Assessment, Inc. (NRA) with a follow-up investigation performed by PCR Services Corporation (PCR). The NRA 2001 study, included as Appendix C of this Draft EIR, and the investigative work conducted by PCR, were undertaken consistent with accepted scientific, technical, and professional standards pursuant to the California Environmental Quality Act (CEQA), United States Fish and Wildlife Service (USFWS), United States Army Corps of Engineers (ACOE), and California Department of Fish and Game (CDFG), where appropriate. The following investigation was to verify the NRA findings and augment the assessment of wildlife movement on the project site.

1. ENVIRONMENTAL SETTING

NRA reviewed available information on the known sensitive species in the area. The literature review included a review of standard field guides and texts on sensitive and non-sensitive biological resources, as well as the following sources:

- List of sensitive biological resources provided by the California Natural Diversity Database (CNDDB);
- General texts and other documents identifying potential resources on the property; and
- Available technical information on the biological resources of the site, which was used to focus the survey efforts in the field.

General assessment field surveys were conducted by NRA biologists on May 10, 2001. The field team surveyed the property using standard survey techniques for biological assessments. General reconnaissance level surveys were conducted throughout the site.

The field surveys were focused on sensitive resources but included observations on the general biological resources of the site, including nests, scat, burrows, skeletal remains, and live

individuals. During the surveys, the plant and animal species observed, the surface characteristics and topography of the project area, and the suitability of the habitat for sensitive species were noted. Because common names vary significantly between references, scientific names are included during the first mention of a species; thereafter, common names consistent within the report are used.

Focused surveys for sensitive plant species were conducted by NRA on July 13, 2001, and on August 16, 2001. The surveys focused on areas where Hall's monardella (*Monardella macrantha* spp. *hallii*), Parish's checkerbloom (*Sidalcea hickmanii* var. *parishii*), and Laguna Mountains jewelflower (*Streptanthus bernardinus*), formerly known as the San Bernardino Mountains jewelflower, may occur. Protocol trapping surveys were conducted by NRA for the white-eared pocket mouse (*Perognathus alticola alticola*) from July 10-15, 2001.

A reconnaissance level survey was performed by PCR on August 16, 2002. The focus of the field effort was on verifying and updating the previous NRA work and augmenting the existing information regarding the potential presence of suitable habitat for the southern rubber boa (*Charina bottae umbratica*), the presence or absence of State and Federal jurisdictional waters, and the potential presence of a wildlife movement corridor on-site.

a. Plant Communities

The property is slightly disturbed and dominated by montane coniferous forest. Minor disturbances include the presence of roads along portions of the project site and the associated urban intrusion to parts of the site. Overall, however, the montane coniferous forest community forms a high quality habitat on the project site. Within this forest community, a small amount of montane chaparral habitat is found. Soils on-site appear to be fairly uniform, consisting primarily of decomposed granite and silty sand. The dominant plant species include Jeffrey pine (*Pinus jefferyi*), Ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), white fir (*Abies concolor*), and black oak (*Quercus kelloggii*). Incense cedar saplings are dominant within the understory. Tree cover is approximately 70 percent on the average.

In localized areas of the project site with fewer trees and more open canopy, the ground cover includes grasses and wildflowers. Grasses observed include bluegrass (*Poa secunda*), fringed brome (*Bromus ciliatus*) and cheatgrass (*Brimus tectorum*). Wildflower species seen include resinous cinquefoil (*Potentilla glandulosa*), mountain iris (*Iris hartwegii*), mountain Indian paintbrush (*Castilleja applegati*), and San Bernardino violet (*Viola purpurea*). Herbaceous cover was approximately 50 percent at the time of the survey. A complete list of plant species recorded during the surveys is provided in the NRA 2001 report found in Appendix C.

Although the montane coniferous forest found within the project site is relatively healthy, there is a growing concern in the County of San Bernardino regarding the infestation of bark beetles. This is resulting in the die-off of conifers and hardwoods thereby increasing the risk of fire in forested areas. According to the Forester's Report prepared for the project site in May 2002, the number of dead trees with a diameter at breast height (DBH) of at least six inches that have been killed by the bark beetle amounts to two per acre or approximately 100 trees on-site. Additionally, fir and cedar saplings measuring less than three inches DBH were also found dead as a result of the bark beetle at the time of this tree survey.

b. Wildlife

The mosaic of vegetation communities that exist on the project site and within the adjoining areas provide a functional ecosystem for a variety of wildlife species. The following discusses the wildlife populations observed on the project site during surveys conducted in May, July, and August 2001. A comprehensive list of the wildlife species observed or expected to occur in the vicinity of the project site is provided in the NRA 2001 report.

(1) Amphibians

The potential presence of amphibians varies greatly within a site. Terrestrial species may or may not require standing water for reproduction. Terrestrial species avoid desiccation by burrowing underground and seeking refuge within crevices in trees, rocks, and logs, under stones and within surface litter during the day and dry seasons. Due to their secretive nature, terrestrial amphibians are rarely observed but may be quite abundant if conditions are favorable. Aquatic amphibians are dependent on standing or flowing water for reproduction. No amphibians were observed due to the lack of available surface water at the time of the survey.

(2) Reptiles

Reptilian diversity and abundance typically varies with habitat type and character. Although some species prefer only one or two plant communities, most will forage in a variety of communities. A number of reptile species prefer open habitats that allow free movement and high visibility. Most species occurring in open habitats rely on the presence of small mammal burrows for cover and escape from predators and extreme weather. The only reptiles observed on-site were the western skink (*Eumeces skiltonianus*), side-blotched lizard (*Uta stansburiana*), alligator lizard (*Elgaria multicarinata*) and granite spiny lizard (*Sceloporus orcutti*).

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¹⁶ Bridges, J. and Hatcher, J., Foresters Report for Royal Rangers Adventure Camp Assembles of God Church, May 2002.

(3) Birds

The montane coniferous forest on the site provides foraging and cover habitat for year-round residents, seasonal residents and migrating song birds. The overall condition of this community on the site is good and mostly undisturbed. Representative avian species observed during surveys include Stellar's jay (*Cyanocitta stelleri*), mountain chickadee (*Parus gambeli*), acorn woodpecker (*Melanerpes formicivorus*), western tanager (*Piranga ludoviciana*), mountain bluebird (*Sialia currucoides*), and evening grosbeak (*Coccothraustes vespertinus*).

(4) Mammals

The montane coniferous forest on the project site is anticipated to support a variety of mammals. During field surveys, a number of mammal species were either directly observed, or their presence was deduced by diagnostic signs (track, scat, burrows, etc.), including Botta's pocket gopher (*Thomomys umbrinus*), grey squirrel (*Sciurus griseus*), coyote (*Canis latrans*) and black bear (*Ursus americanus*). Other species, such as the bobcat (*Lynx rufus*) and mountain lion (*Felis concolor*), are expected to be resident within the region and may occasionally utilize the property to forage or for cover.

c. Regional Connectivity/Wildlife Movement

(1) Overview

Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information.¹⁷⁻¹⁸⁻¹⁹⁻²⁰ Corridors effectively act as links between different populations of a species. A group of smaller populations (termed "demes") linked together via a

MacArthur, R. M. and E. O. Wilson. 1967. The Theory of Island Biogeography. Princeton University Press: Princeton, New Jersey.

¹⁸ Soule, M. E. 1987. Viable Populations for Conservation. Sinaur Associates Inc., Publishers, Sunderland, MA.

Harris, L. D. and P. B. Gallagher, New initiatives for wildlife conservation: the need for movement corridors, pages 11-34 in G. Mackintosh, ed. Preserving communities and corridors, Defenders of Wildlife, Washington D.C. 96 pp, 1989.

Bennett, A. F., Habitat corridors and the conservation of small mammals in a fragmented forest environment, Landscape Ecol., 4:109-122, 1990.

system of corridors is termed a "metapopulation." The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increases overall genetic diversity. An increase in a population's genetic variability is generally associated with an increase in a population's health.

Corridors mitigate the effects of habitat fragmentation by: (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic diversity; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs.^{21,22,23,24}

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as "wildlife corridor", "travel route", and "wildlife crossing" to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows:

<u>Wildlife corridor</u>: A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species.

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Noss, R. F, A regional landscape approach to maintain diversity, BioScience, 33:700 706, 1983.

²² Fahrig, L. and G. Merriam, Habitat Patch Connectivity and Population Survival, Ecology, 66:1762-1768, 1985.

²³ Simberloff, D. and J. Cox, Consequences and costs of conservation corridors, Conserv.Biol., 1:63-71, 1987.

Harris, L. D. and P. B. Gallagher, New initiatives for wildlife conservation: the need for movement corridors, pages 11-34 in G. Mackintosh, ed. Preserving communities and corridors, Defenders of Wildlife, Washington D.C. 96 pp, 1989.

<u>Travel route</u>: A landscape feature (such as a ridge line, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another; it contains adequate food, water, and/or cover while moving between habitat areas; and provides a relative direct link between target habitat areas.

<u>Wildlife crossing</u>: A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor.

(2) Wildlife Movement Within the Study Area

According to the County, wildlife corridors are protected areas which link otherwise separated "islands" of habitat.²⁵ Policy direction related to the establishment of corridors and the elimination of "islands" is contained in the County-wide Natural Resource Preservation Policies. Specifically, Policy OR-15 states the following:

Because the County desires to protect and preserve natural habitat, areas shown on the Resources Overlay as "Policy Zones" and "Wildlife Corridors" shall be targeted for ministerial and discretionary actions, including purchase of some lands, in support of preserving the natural features and habitat present.

The project site is located in a triangle formed by Highway 189 to the north and Highway 18 to the south. Wildlife movement through the property has probably been

The "island effect" describes the negative effects of placing native species in the midst of a hostile environment.

In the case of an island surrounded by water, for instance, biologists have demonstrated that both the number of species and of individual animals declines over time due to a number of factors, including inbreeding and competition for scarce food supplies. This same effect occurs when habitat is surrounded by development. In an undeveloped region, for instance, an animal could move freely from one stand of forest to another, subject only to being attacked by a larger animal. As animals left one stand of forest, others could enter from nearby stands. The net effect was a constant shifting of animals, and relative stability in the numbers of individuals. This effect breaks down in areas in which this same stand of forest (or other habitat) is the last remaining example. In this case, if an animal leaves the stand of forest, it is more likely to be killed (by pesticides, household pets, etc.) or to

leave permanently in search of another patch of forest. At the same time, since there are no nearby stands of forest, there are no nearby sources of animals. The result is that the number of animals within the remaining stand declines.

substantially interrupted by both the traffic on the roads and activities that occur at the Pinecrest Christian Conference Center located just north of the site across Highway 189.

The Strawberry Creek wildlife corridor, number 20 within the County of San Bernardino's open space plan, is reported to exist across the site along a north-south alignment.²⁶ The project site exists within the northwestern corner of the corridor and the western portion of the site occurs outside the corridor. In addition, approximately 17 acres primarily in the northeast portion of the project site that is proposed to be retained as open space, makes up the majority of the site area that occurs within the Strawberry Creek corridor. The north-south alignment of this corridor essentially represents the connection of two relatively large drainages (one drainage to the south and the other drainage to the north) across the site. Under the definitions provided above, however, the description of any movement along the alignment through the project site as being a corridor is incorrect for several reasons.

First, the headwaters of these two drainages become obscure and blend with the surrounding topography and vegetation before they reach the site. Therefore, their connection across the site is not supported by defined interconnecting topographic relief and/or cover. Second, as defined, corridors are linear in nature and generally cross landscapes that are otherwise difficult or impossible for wildlife to navigate. Because these drainages course through relatively undeveloped National Forest, wildlife movement can and likely does occur over large blocks of habitat without defined corridors. Third, once these drainages approach the major ridgeline separating them, topography, vegetation cover, and other limiting factors become equal throughout the area of the project site, and there is no reason to believe wildlife needs to follow a straight north-south alignment to move.

Most accurately, the site represents a portion of a travel route (as defined above) due to its location on a ridgeline. In all likelihood, due to the absence of topographic barriers and relatively uniform vegetation, wildlife move in all directions through the area. This movement would include north-south movement in and out of the drainages originating on the ridgeline, as well as east-west along the ridgeline itself. Further, wildlife movement in the area is expected to occur throughout the area of the project and not be concentrated across the site itself. Also, movement across the surrounding two-lane roads is expected to take place primarily by way of surface crossing almost anywhere in the area. Therefore, wildlife crossings are not expected to be a key component of local movement.

²⁶ County of San Bernardino, A Plan of Open Space and Trails for the County of San Bernardino, 1991.

d. Sensitive Species

The following describes the plant and wildlife species present or potentially present within the project site and vicinity which have been afforded special recognition by local, state, and/or Federal resource conservation agencies and organizations. Also discussed are habitats that are unique, of relatively limited distribution, or of particular value to wildlife.

Protected sensitive species are classified by either state or Federal resource management agencies, or both, as threatened or endangered, under provisions of the state and Federal Endangered Species Acts described below. The USFWS, CDFG, and special groups such as the California Native Plant Society (CNPS), maintain watch lists of such resources. Vulnerable or "at-risk" species which are proposed for listing as threatened or endangered (and thereby for protected status) are categorized administratively as "candidates" by the USFWS. The CDFG uses various terminology and classifications to describe vulnerable species. There are additional sensitive species classifications applicable in California which are also described below.

(1) Explanation of Sensitive Resource Classification

(a) Federal Protection and Classifications

The Federal Endangered Species Act of 1973 (FESA) defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range..." Threatened species are defined as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA, it is unlawful to "take" any listed species. "Take" is defined as follows in Section 3(18) of the Act: "... harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, the USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification as forms of "take." These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action which could affect a federally-listed plant and animal species, the property owner and agency are required to consult with USFWS. Section 9(a)(2)(b) of the FESA addresses the protections afforded to listed plants.

Within the last two years, the USFWS instituted changes in the listing status of former candidate species. Former C1 (candidate) species are now referred to simply as candidate species and represent the only candidates for listing. Former C2 species (for which the USFWS had insufficient evidence to warrant listing at this time) and C3 species (either extinct, no longer a valid taxon or more abundant than was formerly believed) are no longer considered as

candidate species. Therefore, these species are no longer maintained in list form by the USFWS, nor are they formally protected. However, former C2 species have been designated, for informational purposes only, *Federal Species of Concern*. This term is employed in this document, but carries no official protections. All references to federally-protected species in this report (whether listed, proposed for listing or candidate) include the most current published status or candidate category to which each species has been assigned by USFWS.

For purposes of this assessment the following acronyms are used for federal status species:

FE – Federal EndangeredFT – Federal Threatened

FPE – Federal Proposed Endangered
 FPT – Federal Proposed Threatened
 FC – Federal Candidate for Listing

FSC – Federal Species of Special Concern (former C2 species)

FSS – Forest Service Sensitive Species

(b) State of California Protection and Classifications

California Endangered Species Act (CESA) defines an endangered species as "...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." The State defines a threatened species as "... a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened Candidate species are defined as "... a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list." Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species.

Article 3, Sections 2080 through 2085, of the CESA addresses the taking of threatened or endangered species by stating "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that

the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided" Under the CESA, "take" is defined as ". . . hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Exceptions authorized by the state to allow "take" require ". . . permits or memorandums of understanding . . ." and can be authorized for ". . . endangered species, threatened species, or candidate species for Scientific, educational, or management purposes." Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

Additionally, some sensitive mammals and birds are protected by the state as Fully Protected Mammals or Fully Protected Birds, as described in the California Fish and Game Code, Sections 4700 and 3511, respectively. California Species of Special Concern ("special" animals and plants) listings include special status species, including all state and Federal protected and candidate taxa, Bureau of Land Management and United States Forest Service sensitive species, species considered to be declining or rare by the CNPS or National Audubon Society, and a selection of species which are considered to be under population stress but are not formally proposed for listing. This list is primarily a working document for the CDFG's CNDDB project. Informally listed taxa are not protected *per se*, but warrant consideration in the preparation of biotic assessments. For some species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest sites.

SE – State Endangered

ST – State Threatened

SCE – State Candidate EndangeredSCT – State Candidate Threatened

SFP – State Fully Protected

SP – State Protected

SR - State Rare

CSC – California Species of Special Concern

(c) California Native Plant Society

CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in the State. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California.²⁷ The list serves as the candidate list for listing as threatened and endangered by CDFG. CNPS has developed five categories of rarity:

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⁷ Skinner, M. W., and B. M. Pavlik., California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California, California Native Plant Society, Special Publication, no. 1, 5th ed., Sacramento, California, 1994.

List 1A: Presumed extinct in California.

List 1B: Rare, threatened, or endangered throughout their range.

List 2: Rare, threatened, or endangered in California, but more common in other states.

Sensitive species that occur or potentially could occur on the project site are based on one or more of the following: (1) the direct observation of the species on the property during one of the biological surveys; (2) a record reported in the CNDDB; and (3) the project site is within known distribution of a species and contains appropriate habitat.

(d) Resource Agency Policies and Regulations

Authorization of incidental take of a listed species by a private individual or private entity is granted in one of the following ways:

- **CDFG Section 2081.5:** CDFG is authorized to issue a permit or Memorandum of Understanding or approve a Natural Community Conservation Plan (NCCP), Habitat Conservation Plan (HCP), Habitat Management Plan (HMP) or amendment thereto if the conditions of Section 2081 are met. Such conditions include the following:
 - The take is incidental to an otherwise lawful activity.
 - The impacts of the take shall be minimized and fully mitigated. The measure required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species.
 - The permit is consistent with any regulations adopted pursuant to Sections 2112 and 2114.
 - The applicant shall ensure adequate funding to implement the measures required [for mitigation] and for monitoring compliance with, and effectiveness of, those measures.

(2) Sensitive Plant Communities

In addition to the presence of montane coniferous forest and montane chaparral communities that are relatively common in the area, several sensitive plant communities were reported in the CNDDB from the vicinity. All plant communities identified by the CNDDB as potentially present, including Riversidian alluvial fan sage scrub, southern sycamore alder riparian woodland, southern mixed riparian forest, southern California threespine stickleback stream, and pebble plains, do not occur on the project site.

(3) Sensitive Plant Species

Sensitive plants include those listed, or candidates for listing by USFWS, CDFG, and CNPS (particularly List 1A, 1B, and 2). Several sensitive plant species were reported in the CNDDB from the vicinity. A discussion of each sensitive species recognized by the CNDDB and NRA as potentially present on the property is presented in Table 16 on page 80. This table summarizes the Sensitive Biological Resources discussion in the 2001 NRA report in Appendix C of this document. Of the species listed as potentially present, habitat was found for Hall's monardella, Parish's checkerbloom, and Laguna Mountains jewelflower. Hall's monardella is a CNPS list 1B species. Parish's checkerbloom is a list 1B, a candidate for Federal listing, and a state rare species. Laguna Mountains jewelflower was a U.S. Forest Service (USFS) sensitive species, but is currently a CNPS list 4 species. No State- or Federally-listed endangered or threatened plant species were observed during directed surveys and none are expected to occur on-site.

It should be noted that the species accounts reflect available information and the findings of focused plant surveys contributing to this report. It is acknowledged that plant population numbers (particularly among annual species) do vary from year to year depending on environmental factors (e.g., rainfall, temperatures) and other natural phenomena (e.g., wild fires). Therefore, some sensitive plant populations may vary in their detectability from season to season. From a purely scientific standpoint this potential for variation may seem problematic. In the case of this assessment, every effort was made to survey for sensitive plants during the peak flowering periods for these species.

(4) Sensitive Wildlife Species

Several sensitive wildlife species were reported in the CNDDB from the vicinity. A summary of sensitive wildlife species recognized by the CNDDB and NRA as observed or potentially present on the project site is presented in Table 17 on page 86. All sensitive species with at least a moderate potential of occurring on site are indicated as such in the table. Some species are not expected on site due to the lack of suitable habitat. In a few cases, comments are provided for further explanation.

Of the species listed as potentially present, habitat was found for the southern rubber boa, San Bernardino ringneck snake (*Diadophus punctatus modestus*), San Bernardino Mountain kingsnake (*Lampropeltis zonata parvirubra*), northern goshawk (*Accipiter gentiles*), San Bernardino flying squirrel (*Glaucomy sabrinus californicus*), and the white-eared pocket mouse. In addition, a number of sensitive raptor and bat species may forage or even nest on-site. No State- or Federally-listed endangered or threatened wildlife species were observed on-site. Only one sensitive species, the golden eagle (*Aquila chrysaetos*), was observed on-site.

Table 16

ROYAL RANGERS SENSITIVE PLANTS

VASCULAR PLANTS	SLN							
		Flowering			CNPS			Occurrence
Scientific Name	Common Name	Period	Federal State		List	Preferred Habitat	Distribution	On-Site
Arabis parishii	Parish's rock cress	AprMay	NONE	NONE	1B	Pebble pavement on dry slopes from 6,500 to 9,800 feet. Yellow pine forest, red fir forest.	Bear Valley and Sugarloaf Peak.	NE
Arenaria ursina	Big Bear Valley sandwort	May-Aug.	FT	NONE	11B	Pebble pavement on dry slopes from 6,000 to 7,000 feet. Pinyon and Juniper woodland.	Endemic to San Bernardino Mountains, known only from Big Bear and Baldwin Lakes.	NE
Astragalus leucolobus Big Bear Valley woolly pod	Big Bear Valley woolly pod	May-July	NONE	NONE	1B	Pebble pavement from 6,000 to 8,000 feet. Upper montane coniferous forest. Pinyon and juniper woodland and sagebrush scrub.	Known from the central San Gabriel Mountains, San Bernardino and Santa Rosa Mountains.	NE
Berberis nevinii	Nevin's barberry	MarApr.	FE	SE	1B	Sandy and gravelly places below 2,000 feet. Coastal sage scrub and chaparral.	Known from the hills south of Loma Linda in San Bernardino County and in the area around Vail Lake in Riverside County.	NE
Calochortus palmeri var. palmeri	Palmer's mariposa lily	May-July	FSC	NONE	11B	Meadows and moist places from 3,500 to 6,500 feet. Chaparral and yellow pine forest.	Known from the north San Bernardino Mountains to Tehachapi Mountains and East San Luis Obispo.	NE
Calochortus plummerae	Plummer's mariposa lily	May-July	NONE	NONE	1B	Dry, rocky areas in coastal sage scrub, chaparral, meadows and seeps, and yellow pine forest below 1,700 meters (5,000 feet) elevation.	Know from the Santa Monica Mountains and San Jacinto Mountains.	NE

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Table 16 (Continued)

ROYAL RANGERS SENSITIVE PLANT

VASCULAR PLANTS	NTS							
		Flowering			CNPS			Occurrence
Scientific Name	Common Name		Federal State	State	List	Preferred Habitat	Distribution	On-Site
Castilleja cinerea	Ash-gray Indian paintbrush	June-Aug.	FT	NONE	11B	Pebble pavement plains, Mojavean desert scrub meadows and seeps. Pinyon and juniper woodland and upper montane coniferous forest from 5,000 to 9,800 feet.	Endemic to the San Bernardino Mountains at fewer than 20 occurrences.	ZB
Castilleja lasiorhyncha	San Bernardino Mountains owl's clover	June-Aug.	NONE	NONE	1B	Pebble pavement chaparral, upper montane coniferous forest and meadows from 4,600 to 7,400 feet.	Known from south San Bernardino Mountains south to Cuyamaca Mountains.	NE
Deinandra (Hemizonia) mohavensis	Mojave tarplant	July-Sept.	NONE	SE	1B	Riparian scrub, Joshua tree woodland and chaparral from 2,500 in San Bernardino to 4,800 feet. Low sand bars along Mountains and San Jacinto riverbeds. Mostly in riparian areas Mountains.	Reported from Deep Creek in San Bernardino Mountains and San Jacinto Mountains.	NE
Dudleya abramsii spp. affinis	San Bernardino Mountains dudleya	AprJune	NONE	NONE	1B	Pebble pavement on granitic or quartizite outcrops or rarely limestone, from 6,000 to 8,500 feet.	Endemic to the San Bernardino Mountains.	NE
Erigeron uncialis var. Limestone daisy uncialis	Limestone daisy	June-July	NONE	NONE	2	Crevices of limestone cliffs from 7,000 to 9,500 feet. Occurs in sagebrush scrub, bristlecone forest, pinyon juniper woodland.	Known from the Clark Mountains, eastern San Bernardino County, Inyo Mountains, Tin Mountains and the western Mojave desert.	NE
Eriogonum kenndeyi ssp. austromontanum	Southern mountain buckwheat	July-Sept.	FT	NONE	11B	Pebble pavement and 6,300 to 6,500 feet from yellow pine forest.	Known from Bear Valley in the San Bernardino Mountains.	NE

Table 16 (Continued)

ROYAL RANGERS SENSITIVE PLANT

VASCULAR PLANTS	NTS							
		Flowering			CNPS			Occurrence
Scientific Name	Common Name	Period	Federal State	State	List	Preferred Habitat	Distribution	On-Site
Helianthus nuttallii spp. parishii	Los Angeles sunflower	AugOct.	NONE	NONE	1A	Wet ground. 1,000 to 1,500 feet.	Probably extinct last known from Los Angeles, San Bernardino and Orange counties.	NE
Heuchera parishii	Parish's alum root	June-Aug.	NONE	NONE	1B	Rocky places in montane coniferous forest from 5,000 to 8,900 feet.	Known from the San Bernardino Mountains.	NE
Horkelia wilderae	Barton Flats horkelia	May-Aug.	NONE	NONE	1B	Dry benches in yellow pine forest from 6,000 to 8,000 feet.	Endemic to the San Bernardino Mountains.	NE
Ivesia argyrocoma	Silver-haired ivesia	June-Aug.	NONE	NONE	1B	Pebble plain montane coniferous forest and dry meadows from 6,500 to 7,500 feet.	Known from the San Bernardino Mountains south to Baja California.	NE
Lesquerella kingii ssp. bernardina	San Bernardino Mountains bladderpod	May-June	FE	NONE	1B	Dry plats in Pinyon and juniper woodland and yellow pine forest from 6,600 to 6,700 feet.	Known from eastern end of Bear Valley in San Bernardino Mountains.	NE
Lilium parryi	Lemon lily	July-Aug.	NONE	NONE	1B	Springy places and wet banks in riparian scrub and montane coniferous forest from 4,000 to 9,000 feet.	Known from San Gabriel Mountains south to San Diego County.	NE
Linanthus concinnus	San Gabriel Iinanthus	May-July	NONE	NONE	1B	Montane coniferous forest and dry rocky slopes from 5,000 to 8,500 feet.	Known from the San Gabriel Mountains.	NE
Linanthus killipii	Baldwin Lake linanthus	May-July	NONE	NONE	11B	Pinyon juniper woodland, pebble pavement and dry slopes from 5,000 to 7,000 feet.	Endemic to the San Bernardino Mountains in the Baldwin Lake area.	NE

Table 16 (Continued)

ROYAL RANGERS SENSITIVE PLANT

VASCULAR PLANTS	SLN							
		Flowering			CNPS			Occurrence
Scientific Name	Common Name	Period	Federal	State	List	Preferred Habitat	Distribution	On-Site
Lycium parishii	Parish's desert- thorn	MarApr.	NONE	NONE	2	Sandy to rocky slopes and canyons in coastal sage scrub, creosote bush scrub below 2,000 feet.	Known from San Bernardino Valley and western Colorado Desert.	NE NE
Mimulus exiguous	San Bernardino Mountains monkeyflower	June-July	NONE	NONE	1B	Pebble pavement and moist disturbed places.	Known from the San Bernardino Mountains and Baja California.	NE NE
Mimulus purpureus	Purple monkeyflower	May-July	NONE	NONE	118	Moist sandy places from 6,000 to 7,300 feet.	Known from the San Bernardino Mountains and Baja California.	S E
Monardella macrantha spp. hallii	Hall's monardella	June-Aug.	NONE	NONE	118	Chaparral, forest and woodland habitats on slopes and ridges from 2,500 to 6,000 feet.	Known from the San Gabriel, San Bernardino, Cuyamaca and Santa Ana Mountains.	Z.
Opuntia basilaris var. brachyclada	Short-joint beavertail	AprJune	NONE	NONE	11B	Occurs on dry slopes in chaparral, riparian woodland, and Joshua tree woodland.	Historically distributed on the desert slopes of the San Gabriel and San Bernardino Mountains, and also the Providence Mountains.	NE
Oxytheca parishii var. goodmaniana	Cushenbury oxytheca	June-Sept.	FE	NONE	1B	Limestone talus from 4,800 to 7,500 feet.	Endemic to northern slopes of the San Bernardino Mountains.	NE
Perideridia parishii ssp. parishii	Parsh's yampah	June-July	NONE	NONE	2	Coniferous forest and damp meadows from 4,000 to 7,500 feet.	Known from the San Bernardino Mountains and other western states.	NE
Phlox dolichantha	Big Bear Valley phlox	June-July	NONE	NONE	11B	Open places in montane coniferous forest on pebble pavement.	Known from Bear Valley in the San Bernardino Mountains.	NE

Table 16 (Continued)

ROYAL RANGERS SENSITIVE PLANT

VASCULAR PLANTS	SLN							
		Flowering			CNPS			Occurrence
Scientific Name	Common Name	Period	Federal	State	List	Preferred Habitat	Distribution	On-Site
Poa atropurpurea	San Bernardino blue grass	JanJuly	FE	NONE	1B	Meadows and grassy slopes from 5,000 to 7,500 feet.	Endemic to the San Bernardino Mountains.	NE
Poliomintha incana	Frosted mint	June-July	NONE	NONE	1A	Thought to occur in moist places. Associated with yellow pine forest.	Historically collected only from one wet place above Cushenbury Springs in the San Bernardino Mountains.	NE
Pyrrocoma uniflora var. gossypina	Bear Valley pyrrocoma	July-Sept.	NONE	NONE	1B	Alkaline solids of mountain meadows, open forest, near hot springs from 6,000 to 7,500 feet.	Known from the Baldwin Lake area, San Bernardino Mountains.	NE
Ribes divaricatum var. parishii	Parish's gooseberry	FebApr.	NONE	NONE	1B	Willow thickets, swamps, similar moist and damp sites.	Known from the San Bernardino region and Los Angeles County.	NE
Senecio bernardinus	San Bernardino ragwort	May-July	NONE	NONE	1B	Pebble pavement, coniferous forest on the rocky slopes from 6,400 to 7,500 feet.	Known from Bear and Holcomb Valleys in the San Bernardino Mountains.	NE
Sidalcea hickmanii ssp. parishii	Parish's checkerbloom	July-Aug.	FC	SR	1B	Dry mountain slopes within chaparral and yellow pine forest between 4,000 and 7,500 feet elevation.	Known from the San Bernardino and Los Padres National Forests.	FN
Sidalcea pedata	Bird-foot checkerbloom	May-July	FE	SE	1B	Wet meadows from 6,500 to 7,500 feet.	Known from the San Bernardino Mountains.	NE
Streptanthus bernardinus	Laguna Mountains Jewelflower	June-July	NONE	NONE	4	Chaparral and coniferous forest on dry slopes from 4,000 to 7,500 feet.	Known from San Gabriel Mountains south to the Laguna Mountains.	FN
Taraxacum californicum	California dandelion	May-July	FE	NONE	1B	Moist meadows from 6,500 to 8,300 feet.	Endemic to the San Bernardino Mountains.	NE

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Table 16 (Continued)

ROYAL RANGERS SENSITIVE PLANT

VASCULAR PLANTS	NTS								
		Flowering			CNPS				Occurrence
Scientific Name	Common Name	Period	Federal State	State	List	Preferred Habitat		Distribution	On-Site
Thelypodium stenopetalum	Slender-petalled June-July thelyposium	June-July	FE	SE	11B	Meadows, seeps and stony slopes from 6,500 to 7,000 feet in yellow pine forest.		Known from Bear Valley in the San Bernardino Mountains	NE
(Thelypteris puberula Sonoran maiden var. sonorensis) fern		Non- flowering	NONE	NONE	2	Wet shaded canyons below 3,000 feet.		Known from the lower slopes of Peninsular and Transverse mountains to Baja California.	NE
Key to Species Listing Status Codes FE Federally Listed as Endangered FT Federally Listed as Threatened FSC Federal Special Concern Specie FC Federal Candidate FSS Forest Service Sensitive	Species Listing Status Codes Federally Listed as Endangered Federally Listed as Threatened Federal Special Concern Species Federal Candidate Forest Service Sensitive	SE ST SCE SCT	υЦ	Listed Listed Candi	State Listed as Endangered State Listed as Threatened State Candidate for Endang State Candidate for Threate	SR CSC ered ined	State Rare California Sp	State Rare California Special Concern Species	
California Native Plant Society (CNPS) List 1A: Presumed extinct in Califors List 1B: Rare, threatened, or endange List 2: Rare, threatened, or endange	Vative Plant Society (CNPS) Presumed extinct in California. Rare, threatened, or endangered throughout their range. Rare, threatened, or endangered in California, but more common in other states.	ı. ed throughou ed in Califor	ıt their ran	ge. ore con	mon in	other states.			

Table 17

INVERTEBRATES						
Scientific Name	Common Name	Federal State	State	Preferred Habitat	Distribution	Occurrence On-Site
INSECTA - GRASSHOPPERS, KATYDIDS, CRICKETS, BEETLES, FLIES, BUTTERFLIES, MOTHS	, KATYDIDS, CRICKETS,	BEETLES	, FLIE	S, BUTTERFLIES, MOTHS		
Order Coleoptera	Beetles					
Hydroporus simplex	simple hydropous diving	FSC	NONE	NONE Aquatic habitats	Pinecrest area of Tuolumne	
	beetle				Co. and the Holcomb Valley area of the San Bernardino Mountains	NE

VERTEBRATES						
1			·			Occurrence
Scientific Name	Common Name	Federal State	State	Preferred Habitat	Distribution	On-Site
FISHES						
Catostomidae	Sucker Family					
Catostomus santaane	Santa Ana sucker	FT	csc	Santa Ana, Santa Clara, San Larger rivers of southern Gabriel and Los Angeles rivers California; declining due to	Larger rivers of southern California; declining due to	
					the introduction of non- native species and the	NE
					degradation of urbanized streams.	
Gasterosteidae	Stickleback Family					
Gasterosteus aculeatus	unarmored threespine	FE	SE, SFP	SE, SFP Coastal streams and rivers and Santa Ana, Santa Clara and	Santa Ana, Santa Clara and	
williamsoni	stickleback			major rivers along the coastal	other major rivers along the	NE
AMPHIBIANS						
Bufonidae	TrueToads					
Bufo californicus	arroyo toad	FE	CSC	Washes and arroyos with open Coastal and a few desert	Coastal and a few desert	
				water; sand or gravel beds; for	streams from Santa Barbara	Ä
				breeding, pools with sparse	County to Baja California.	
				overstory vegetation		

Table 17 (Continued)

VERTEBRATES						
Scientific Name	Common Name	Federal	State	Preferred Habitat	Distribution	Occurrence On-Site
Ranidae	True Frogs					
Rana aurora draytonii	California red-legged frog	FT	CSC	Streams and slow-moving water and deep pools; dense, shrubby riparian vegetation at	Coastal streams from Marin County to Ventura County; between Ventura County	NE
Rana muscosa	mountain yellow-legged frog	FE	CSC	Always encountered within a few feet of water in rocky	Rocky stream courses in southern California	NE
Comments: Federal listing propo	osal refers to populations in th	ie San Gabi	riel, San	Federal listing proposal refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains.	ountains.	
REPTILES	•					
Phrynosomatidae	Iguanid Lizard Family					
Phrynosoma coronatum blainvillei	San Diego horned lizard	FSS	CSC	Valley-foothill hardwood, conifer, and riparian habitats,	Coastal ranges from south Ventura, Los Angeles, San	
				pine-cypress, juniper and annual grassland habitats	Bernardino counties, Orange, western Riverside	EZ
				below 6,000 feet, open country, especially sandy areas, washes, flood plains,	and western San Diego counties.	ļ
	1			and windblown deposits.		
Boidae	Boas					
Charina bottae umbratica	southern rubber boa	FSC, FSS	ST	Usually occurs in moist woodlands and coniferous	San Bernardino, San Jacinto Mountains and Mt. Pinos	EX
				forests. Mixed conifer-oak forest and woodlands at		
				elevations 5,000 to 8,000 feet.		
				Prefers old large logs, rock		
				piles as hibernacula, as well as dense leaf litter.		
Comments: See Figure 13, Royal Rangers Project Site Showing Jurisdictional Drainages and Rock Refugia, on page 93	ıl Rangers Project Site Showir	ıg Jurisdict	tional D	rainages and Rock Refugia, on p	nage 93.	

Table 17 (Continued)

VERTEBRATES						
Scientific Name	Common Name	Federal	State	Preferred Habitat	Distribution	Occurrence On-Site
Colubridae	Colubrid Snakes					
Diadophis punctatus modestus	San Bernardino ringneck	FSS	NONE	Most common in open,	Northern San Diego County	
	snake			relatively rocky areas within	north through Ventura	
				valley-foothill, mixed	County.	EX
				chaparral, and annual grass		
				habitats.		
Lampropeltis zonata parvirubra	San Bernardino mountain	FSS	CSC	Relatively open stands of	In southern California	
	kingsnake			mixed coniferous forest. From	associated with Transverse	
				4,500 feet to 6,500 feet, but	Ranges including San	EX
				can occur less commonly at	Bernardino, San Gabriel,	
				higher and lower elevations	and San Jacinto Mountains.	
Thamnophis hammondii	two-striped garter snake	FSS	CSC	Only found in or near	Monterey County. to	
				permanent water sources.	northern Baja California.	
				Streams with rocky beds		NE
				supporting willows or other		
				riparian vegetation.		
BIRDS						
Accipitridae	Hawks, Kites, Harriers and Eagle Family	Eagle Fa	mily			
Haliaeetus leucocephalus	Bald eagle	FT, FPD	SE,	Aquatic ecosystems including	Rare throughout North	
			CSC,	coastal areas, rivers, lakes and	America.	NE
			SFP	swamps.		
Accipiter cooperi	Cooper's hawk	NONE	CSC	(Nesting) Open woodlands	Entire state.	FV B
				especially riparian woodland.		EA, D
Accipiter striatus	sharp-shinned hawk	NONE	CSC	(Nesting) Woodlands; forages	Entire state, although only	
				over chaparral and other	winters in most of southern	
				scrublands; prefers riparian	California.	н х
				habitats and north-facing		1 (1)
				slopes, with plucking perch		
				sites.		

Table 17 (Continued)

						Occurrence
Scientific Name	Common Name	Federal State	State	Preferred Habitat	Distribution	On-Site
Accipiter gentilis	northern goshawk	FSC, FSS CSC	CSC	(Nesting) Coniferous forest	Breeds in north coast ranges	
				plant communities including	in California. but only in	
				ponderosa and Jeffrey pine,	Ventura County, the San	й Б
				mixed conifer, white fir, and	Bernardino Mountains, and	ЕЛ, Б
				lodgepole pine.	the San Jacinto Mountains	
					in southern California.	
Aquila chrysaetos	golden eagle	NONE	csc,	(Nesting and wintering)	Throughout California with	
			SFP	Mountains, deserts, and open	the exception of the center	
				country; prefer to forage over	of the Central Valley.	d dO
				grasslands, deserts, savannahs		OB, B
				and early successional stages		
				of forest and shrub habitats.		

Comments: The golden eagle was observed soaring over the project site. Due to its presence in April, this species may be utilizing the site for both foraging and nesting purposes.

EX, F PT, F Ä California coastal areas and Winter migrant throughout most of the western half of (Nesting) Riparian woodlands, An uncommon to common north; locally common in montane chaparral, and mixed summer resident in the conifer habitats. inland mountains. the south. the State. SE, SFP (Nesting) Wetlands near high cliffs; few known to nest in (Wintering) Coastlines, agricultural fields, and grasslands. wetlands, woodlands, urban settings on tall buildings. CSC CSCFSC, DE-LISTED, FSS NONE NONE American peregrine falcon Wood Warblers yellow warbler Falcons merlin Dendroica petechia brewsteri Falco perefrinus anatum Falco columbarius Falconidae **Parulidae**

Table 17 (Continued)

VERTEBRATES						
Scientific Name	Common Name	Federal	State	Preferred Habitat	Distribution	Occurrence On-Site
MAMMALS						
Vespertilionidae	Evening Bats					
Antrozous pallidus	pallid bat	FSS	CSC	Wide variety of habitats but most common in open, dry habitats with rocky areas for roosting.	Throughout California except the high Sierra and northwest comer of the State.	PT
Corynorhinus (Plecotus) townsendii townsendii	Townsend's western big- eared bat	FSC, FSS	CSC	Found in all but subalpine and alpine habitats.	Throughout California.	PT
Euderma maculatum	spotted bat	FSC	CSC	Arid deserts and grasslands through mixed conifer forests.	Foothill, mountain, and desert regions of southern California.	PŢ
Molossidae	Free-tailed bats					
Eumopus perotis californicus	California mastiff bat	FSC	CSC	In California found in rocky areas at low elevations with roosting occurring in crevices.	North-central California to Baja California and east to southwest U.S.	PT
Nyctinomopss macrotis	big free-tailed bat	NONE	CSC	Prefers rocky, rugged terrain. Roosts in crevices in high cliffs or rocky outcrops.	Populations scattered throughout southwestern U.S. Breeds in Arizona, New Mexico, and Texas.	PT
Sciuridae	Squirrel Family					
Glaucomys sabrinus californicus	San Bernardino flying squirrel	FSS	csc	Mid to upper elevation (5,200 to 8,500 ft.) coniferous forest plant communities. Mature, dense conifer forest, typically with white fir close to riparian areas.	San Bernardino Mountains, historically in San Jacinto Mountains.	EX

Table 17 (Continued)

VERTEBRATES						
Coiontific Nomo	Common Nomo	Fodorel Ctoto	State	Drofowood Hobitot	Dietwibution	Occurrence On Site
IIC IValine	Common Maine	r cuci ai	State	I ICICII CA HADILAL	DISTIDATION	OII-DIC
Heteromyidae	Pocket Mice and Kangaroo Rat Family	Rat Family	y			
Perognathus alticola alticola	white-eared pocket mouse	FSS	CSC	Dry, open pine forest with	Tehachapi and San	
				bracken fern. Sagebrush and	Bernardino Mountains from	
				other shrubs in ponderosa and	3,500 to 6,900 ft. elevation.	FN
				Jeffrey pine forests. Sandy		
				soils.		
Comments: This species has not been observed	been observed in the San Bernardino Mountains since 1938.	nardino Mo	ountains	since 1938.		
Bovidae	Bison, Goats, and Sheep					
Ovis canadensis nelsoni	Nelson's bighorn sheep	NONE	NONE	Prefers rugged terrain and can	White Mountains south to	
				be found near the valley floor	Mexico. Also in San	
				to the tops of desert mountain	Bernardino Mountains and	NE
				ranges.	in isolated populations in San Gabriel Mountains.	
Comments: The Nelson's bighorn sheep is a Bureau of Land Management sensitive species.	n sheep is a Bureau of Land N	Managemen	t sensiti	ve species.		
Key to Species Listing Status Codes	Se)		4		
FE Federally Listed as Endangered	gered SE	State Listed as Endangered	d as Enc	dangered		
FT Federally Listed as Threatened	tened ST	State Listed as Threatened	d as Thi	reatened		
FSC Federal Special Concern Species	Species SCE	State Cand	lidate fo	State Candidate for Endangered		
FPE Federally Proposed as Endangered	dangered scr	State Cand	lidate fo	State Candidate for Threatened		
FPT Federally Proposed as Threatened	reatened SR	State Rare				
FPD Federally Proposed for Delisting	elisting SFP	State Fully Protected	Protect	pa		
FSS Forest Service sensitive species	oecies CSC	California	Special	California Special Concern Species		

e. Jurisdictional "Waters of the State"

Although a formal jurisdictional delineation was not performed on the site, an assessment of potential jurisdictional constraints was conducted during field surveys. No jurisdictional wetlands occur on the project site. Further, the drainages on-site do not connect with any "waters of the U.S." under the jurisdiction of the ACOE. Because these drainages are isolated from ACOE jurisdictional waters, they are not under ACOE jurisdiction.

Several drainages with definable bed and banks have been identified on topographic maps and in the field (Figure 13 on page 93). Therefore, these drainages are subject to the jurisdiction of the CDFG under Sections 1601-1603 of the California Fish and Game Code. The CDFG takes jurisdiction over the streambed and associated riparian habitat, although the riparian habitat found within drainages on the project site is characteristic of upland vegetation. According to calculations made by NRA, the project site contains approximately 3,313 linear feet of drainages. Subsequent measurements performed by PCR indicate a total of approximately 4,124 feet of drainages on-site. This apparent disparity between the two measurements could potentially be a result of scaling or arithmetic errors. The true distance and amount of CDFG jurisdictional streambed will be accurately determined in consultation with the CDFG during the permit process

f. Regulatory Framework

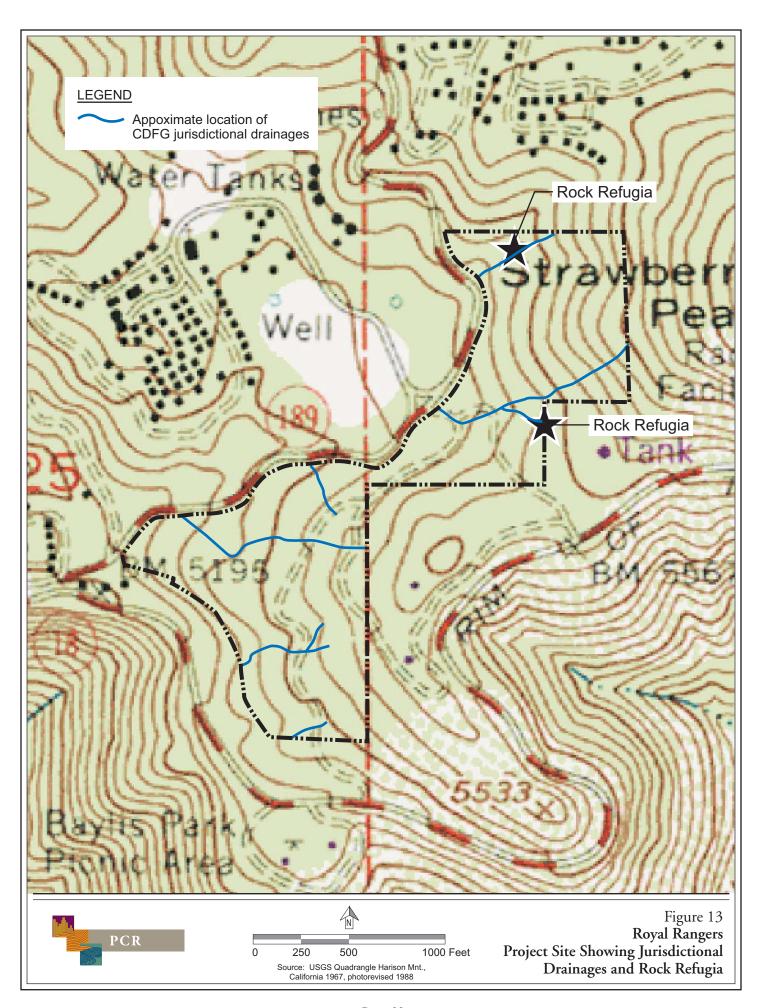
As part of the proposed project's review and approval, there are certain performance criteria and standard conditions that must be met. Among these are those that relate to County regulating agencies for implications of the bark beetle infestation, impacts to native plants and trees, and open space designations and wildlife movement corridors.

(1) Bark Beetle Infestation

The County of San Bernardino Board of Supervisors (the Board) has declared a state of emergency in the County's forested areas due to the infestation of the bark beetle and the elevated risk of fire.²⁸ In response to this emergency, the Board approved a bark beetle action plan that utilizes both federal and local funding for removing dead trees and minimizing fire danger. The goal of the bark beetle action plan is summarized below:

• Mapping of mountain areas to prioritize tree removal;

²⁸ County of San Bernardino, News: County Encouraged by State's Action on Forest Disaster, April 16, 2003.



- Removal of dead trees and debris primarily along fire excavation routes;
- Purchase of a wood chipper, two incinerator devices, and a log loader; and
- Development of a public education campaign with the possibility of creating additional local funding for tree removal on private lands.

In light of this recent emergency declaration, several precautionary actions shall be taken during construction activities on the project site. An Arborist or Registered Professional Forester shall be present at least once a month during construction to insure the proper implementation of Insect Prevention Guidelines recommended in the Forester's Report prepared for the project site and summarized below:²⁹

- Removal of all pine branches and logs within 15 days of tree removal operations to reduce the potential infestation of bark beetles in cut materials. Chipping, debarking, sealing with plastic for four to six months, or exposure of cut limbs to sun are other methods allowed by the California Forest Practice Rules;
- Protective spraying of high value trees with carbaryl insecticide prior to construction activities; and
- Keep landscape planting and irrigation outside the dripline of remaining trees to avoid interruption of natural wet-dry cycles.

(2) Tree Protection

In addition to following the County's Plant Protection and Management Ordinance, protective measures will be implemented during construction for high value trees which could be damaged by construction activities due to their proximity to road and facility clearing limits. Tree Protection Guidelines, established by Tree City USA,³⁰ have been adopted for implementation by an ISA Certified Arborist or Registered Professional Forester and are summarized below:³¹

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²⁹ Bridges, J. and Hatcher, J., Foresters Report for Royal Rangers Adventure Camp Assembles of God Church, May 2002.

Tree City USA, sponsored by The National Arbor Day Foundation in cooperation with the USFS and the National Association of State Foresters, provides direction, technical assistance, public attention, and national recognition for urban and community forestry programs throughout the United States.

³¹ Bridges, J. and Hatcher, J., Foresters Report for Royal Rangers Adventure Camp Assembles of God Church, May 2002.

- Placement of protective barriers around trees;
- Reduce soil compaction by limiting ground disturbing activities to dry summer and early fall;
- Limit the use of heavy equipment outside of construction areas;
- Keep heavy equipment and concrete and asphalt pads outside the dripline of existing trees;
- Keep fill material over six inches deep outside the dripline of existing trees, and barrier walls where fill is necessary;
- Keep foundation footing outside the dripline of existing trees and consult with an ISA Certified Arborist or Registered Professional Forester if not possible;
- Avoid contact between underground utility lines and tree roots;
- Repair damaged tree roots larger than two inched in diameter by creating a clean cut and applying a tree seal;
- Place plastic or chemical root barriers between foundation footing and roots;
- Keep grading cuts greater than two inches deep outside the dripline of existing trees and place mulch in areas of minor grading;
- Prevent dumping of concrete and masonry materials under the dripline of existing trees and prevent washing of delivery trucks on the project site; and
- Follow ISA Pruning Standards for necessary pruning of residential trees.

(3) Open Space and Wildlife Corridors

The Open Space Element of the County of San Bernardino General Plan includes a plan to protect the major open space areas throughout the County. These areas are identified in a Plan of Open Space and Trails for the County of San Bernardino.³² This plan was created to balance urban development with the protection of natural resources and other open space uses including recreation, agriculture, preserving health and safety, scenic resources, and trails. The project site is located within the northwest portion of the Strawberry Creek wildlife corridor (#20) which connects the County of San Bernardino to the south with national forest lands to the north. The

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³² County of San Bernardino, A Plan of Open Space and Trails for the County of San Bernardino, 1991.

open space plan recommends that open space areas be maintained within this corridor to preserve habitat values. Although the project site is located within a portion of this corridor, the proposed project would not impede the functioning of this corridor as a connection for wildlife moving in a north-south direction through a portion of the San Bernardino National Forest. Furthermore, as stated in the General Plan Open Space element, Wildlife Corridor Zones are general indications of areas within which major wildlife corridors should be provided <u>based on further study</u>. (Emphasis added.)

2. THRESHOLDS OF SIGNIFICANCE

Determining whether a project may have a significant effect, or impact, plays a critical role in the CEQA process. According to CEQA, Section 15064.7, Thresholds of Significance, each public agency is encouraged to develop and adopt (by ordinance, resolution, rule, or regulation) thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. In the development of thresholds of significance for impacts to biological resources CEQA provides guidance primarily in Section 15065, Mandatory Findings of Significance, and the CEQA Guidelines, Appendix G, *Environmental Checklist Form*. Section 15065(a) states that a project may have a significant effect where:

"The project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or wildlife community, reduce the number or restrict the range of an endangered, rare, or threatened species, . . ."

Appendix G of the CEQA Guidelines is more specific in addressing biological resources and encompasses a broader range of resources to be considered, including: candidate, sensitive, or special status species; riparian habitat or other sensitive natural communities; federally protected wetlands; fish and wildlife movement corridors; local policies or ordinances protecting biological resources; and, adopted HCPs. This is done in the form of a checklist of questions to be answered during the Initial Study leading to the preparation of the appropriate environmental documentation for a project (i.e., Negative Declaration, Mitigated Negative Declaration, or EIR). Because these questions are derived from standards in other laws, regulations, and other commonly used thresholds, it is reasonable to use these standards as a basis for defining significance thresholds in an EIR. Therefore, for the purpose of this analysis, impacts to biological resources are considered significant (before considering offsetting mitigation

measures) if one or more of the following conditions would result from implementation of the proposed project.

- A direct loss of any individuals or any habitat occupied by a State- or Federal-listed threatened or endangered plant or animal species.
- A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate for listing, sensitive, rare, or otherwise special status plant or animal species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Conflict with any adopted local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS.
- A substantial adverse effect on State- or Federal-protected wetlands as defined by Section 1600 of the California Fish and Game Code or Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or on linkages/connectivity between populations of plants and animals, or impede the use of native wildlife nursery sites.
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, State, or Federal HCP.

3. ENVIRONMENTAL IMPACTS

a. Methodology

The environmental impacts relative to biological resources are assessed using impact significance threshold criteria which mirror the policy statement contained in CEQA, Section 21001(c) of the California Public Resources Code. Accordingly, the State Legislature has established it to be the policy of the State to:

"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities"

For the purposes of this impact analysis the following definitions apply:

- "Substantial adverse effect" means loss or harm of a magnitude which, based on current scientific data and knowledge would: (1) substantially reduce population numbers of a species; (2) substantially reduce the distribution of a natural community/habitat type; or (3) eliminate the functions and values of a biological resource (e.g., streams, wetlands, or woodlands) in a geographical area defined by interrelated biological components and systems. In the case of this analysis the prescribed geographical area is considered to be the region including the western portion of the San Bernardino National Forest to the east, the Santa Rosa Plateau to the south, the eastern portion of the Cleveland National Forest to the west, and Lake Ellsinore to the northwest.
- "Conflict" means contradiction of a magnitude, which based on foreseeable circumstances would preclude or prevent substantial compliance.
- "Rare" means that the species exists in such small numbers throughout all, or a significant portion of, its range that it may become endangered if its environment worsens.

Those impacts determined to be less than significant include impacts to biological resources that are relatively common or exist in a degraded or disturbed state, rendering them less valuable as habitat, or impacts that do not meet or exceed the significance thresholds. Also, conclusions are based on conditions of species ecology and the resource's regional distribution and status.

b. Analysis of Impacts to Biological Resources

C-1. Plant Communities and Plant Species. The proposed project would result in the direct removal of common plant communities and plant species from the project site. Impacts to plant communities and species are considered to be *Less-Than-Significant Impacts*.

The project development would impact the montane coniferous plant community, which is relatively common in the San Bernardino Mountains. However, the project would allow much of the montane coniferous forest and montane chaparral to remain intact. Of approximately

6,750 trees on-site with a diameter of at least six inches, 2,165 trees are proposed to be removed in the project design. This represents approximately 32 percent of the total number of trees within the project boundary. Due to the fairly widespread distribution of this natural community in the area, the taking of trees on-site would not have a significant adverse affect on this community. Further, the thinning of trees as a result of this project may be potentially beneficial in light of the bark beetle infestation and associated fire hazards. However, the protection of remaining trees from disturbances during construction is addressed by the Tree Protection Guidelines summarized in the Regulatory Framework section.

Project implementation would also result in the direct removal of numerous common plant species on the project site. Common plant species present on the site occur in large numbers throughout the region and are, therefore, not expected to be significantly impacted.

As previously mentioned, three sensitive plant species may occur within the region. Hall's monardella is a CNPS list 1B species. Parish's checkerbloom is a list 1B, a candidate for Federal listing, and a State rare species. Laguna Mountains jewelflower is a CNPS list 4 species. These species were not observed during focused surveys performed in July and August, which correspond to the flowering periods of these species. Therefore, these species are not expected to occur on-site, and no impacts would result from project construction. All additional sensitive species discussed are not expected to occur on-site due primarily to the lack of suitable habitat and/or non-detection during general field surveys. As such, no impacts are expected to occur to these species.

C-2. Wildlife Species and Movement. The proposed project would result in the direct removal of wildlife habitat from the project site. Impacts to wildlife species and wildlife movement are considered to be *Less-Than-Significant Impacts*.

Project implementation in the short- and long-term would result in the direct removal of existing wildlife habitat and mortality of numerous common wildlife species existing on the proposed project site. Smaller and less mobile species, such as small mammals, reptiles and most invertebrates, will experience a direct reduction in on-site population numbers through the loss of individuals resulting from destruction of habitat and direct individual mortality. Larger and/or more mobile species, such as large mammals and birds, could experience some loss of individuals in the vicinity of the project as a result of loss of habitat. Most mobile animals, however, are expected to leave an area with high human disturbance.

Additionally, indirect project-related impacts would include increased human activity, increased ambient noise, higher unnatural nighttime light levels, and increased threat of road kill by traffic. Increases in nighttime lighting could be beneficial for insectivorous wildlife species, such as bats and toads, because it attracts and concentrates large numbers of insects on which these species feed. However, the negative effects of nighttime lighting and associated human

activities on other wildlife populations generally exceed the possible beneficial effects. Nighttime lighting is detrimental to animals in adjacent habitats because of disruption of light-dark daily rhythms and reduction in the ability of nocturnal species to avoid predators. Similarly, increased noise levels associated with camp activities as described in the noise section of this document may interfere with wildlife activities and functions. These impacts by themselves would not be expected to reduce common wildlife populations below self-sustaining levels in the region; therefore, elimination or disruption of habitat for these species would not represent a regionally significant impact.

As previously mentioned, sensitive wildlife species may occur within the region but are not expected to occur on-site. These species include the Santa Ana sucker, unarmored threespine stickleback, arroyo southwestern toad, California red-legged frog, mountain yellow-legged frog, San Diego horned lizard, two-striped garter snake, yellow warbler, Nelson's bighorn sheep, Andrew's marble butterfly, simple hydroporus diving beetle, and desert monkey grasshopper.

Several additional sensitive wildlife species (detailed by taxonomic group below) were observed or have at least a moderate potential to occur on the site, as previously mentioned. Indirect impacts that may affect sensitive species, including impacts associated with construction (i.e., noise and light), would not have a substantial adverse effect on sensitive species or their habitats. One of the sensitive species, the southern rubber boa, is a State-listed threatened species. Project-related impacts to this species are discussed below. As the remaining species are not protected by Federal or State listings as threatened or endangered, any loss of individuals would not threaten the regional population, and removal of their habitat would represent an adverse, but less-than-significant, impact to regional populations of these species.

One sensitive bird species was observed on-site, the golden eagle. This species may forage on or near the project site; however, nesting habitat is not present within the project vicinity. Habitat for another sensitive avian species, the northern goshawk, was found on-site. This species requires extensive habitat for breeding and foraging, and most of the trees would be preserved on-site. Therefore, the amount of habitat that would be removed is minimal, and any impacts to these sensitive species are considered insignificant. Several species have the potential to occur on-site including the Cooper's hawk, sharp-shinned hawk, merlin, and yellow warbler, although habitat was not found during surveys performed by NRA. All other sensitive avian species are not expected to occur on-site due to the lack of suitable habitat.

Although no sensitive mammal species were observed on-site, two species have a high potential to occur on-site, including the San Bernardino flying squirrel and the white-eared pocket mouse. The San Bernardino flying squirrel can, to a certain extent, co-exist with low density development. The white-eared pocket mouse was not detected during protocol trapping surveys on-site. Further, these species are not protected by Federal or State listings as threatened or endangered, and loss of individuals would not threaten the regional populations. Therefore,

removal of their habitat would represent an adverse, but less-than-significant impact to regional populations of these species.

Project implementation would result in minor disturbances to local wildlife movement on the project site. Initially, temporary impacts to wildlife movement would occur during construction activities. These impacts would include increased noise, light, loss of habitat, and other human-related impacts. After construction, impacts would include increased ambient noise, increased ambient light, and pedestrian activities. Because the site is characterized as part of a travel route and is not itself a wildlife corridor, wildlife crossings are not expected to be a key component of local movement. In addition, the project site is a minor component of the larger Strawberry Creek wildlife corridor and does not concentrate wildlife movement from the surrounding area. Therefore, these impacts are not anticipated to significantly affect regional wildlife movement.

C-3. Southern Rubber Boa. Project construction may impact the southern rubber boa, which may be present on-site. This is considered a *Potentially Significant Impact*.

No reptiles were observed on-site. However, several species have at least a moderate likelihood of occurring on-site to utilize suitable habitat, including southern rubber boa, San Bernardino ringneck snake, and the San Bernardino Mountain kingsnake. Only the southern rubber boa is protected by Federal or State listings as threatened or endangered, as discussed below. The San Bernardino ringneck snake and the San Bernardino Mountain kingsnake have relatively generalized habitat requirements and can be found in a variety of habitats. In addition, loss of individuals of these species would not threaten the regional populations; therefore, removal of their habitat represents an adverse, but less-than-significant, impact to regional populations of these species.

Although the southern rubber boa was not observed during field reconnaissance, this species has the potential to utilize resources at the site for foraging. This is a State-listed threatened species that is an uncommon resident in montane conifer communities. It could potentially utilize suitable habitat within the site for refugia, which includes but is not limited to, the two rock piles and surrounding areas with a well developed duff layer (Figure 13 on page 93). Based on the known habitat requirements of the species and the proximity to known populations, this species may be present on-site and may be impacted by proposed construction and related human activities. Therefore, impacts to this sensitive species are considered potentially significant.

C-4. Jurisdictional "Waters of the State." Project construction would directly impact CDFG jurisdictional streams. This is considered a *Significant Impact*.

The project would directly impact CDFG jurisdictional streambed through construction and development of the proposed camp or by planned activities, such as hiking and nature walks. A small portion of jurisdictional areas may be avoided in the northeast corner of the project site. Although there is currently a discrepancy between the measurements, the true extent of jurisdictional streambed would be confirmed in consultation with the CDFG when a formal determination is performed. Current measurements may be as little as approximately 3,313 feet or as much as 4,124 feet. Regardless, impacts resulting from the project are considered significant due to the total linear distance of stream impacted.

4. CUMULATIVE IMPACTS

The proposed project would contribute to the ongoing loss of several non-sensitive plant communities and plant and animal species within the region. These natural resources are found throughout the San Bernardino National Forest and are protected within this area. Therefore, this loss is considered adverse but not significant on either a site-specific or cumulative level since the area impacted by the project is small relative to the larger forest area that provides protection. Similarly, impacts to non-listed sensitive species are not considered cumulatively significant. Impacts to montane coniferous forest are considered less than significant under the proposed plan. Although the removal of trees would contribute to the ongoing loss of habitat within the region, the resulting thinning of trees may be beneficial by thwarting the spread of bark beetles in light of the bark beetle infestation throughout the San Bernardino National Forest. Impacts to jurisdictional "waters of the State" are not considered cumulatively significant due to the relatively undeveloped state of much of the land surrounding the impacted jurisdictional waters.

The impacts to the southern rubber boa are cumulatively significant due to the direct loss of habitat.

5. MITIGATION MEASURES

The following mitigation measures address potential significant impacts from implementation of the proposed project.

Southern Rubber Boa

MM-C3 Off-site mitigation for impacts to suitable habitat for the southern rubber boa shall be estimated at a ratio of 3:1 in accordance with the CDFG letter dated

April 4, 2002 provided in Appendix C. The impacted areas shall be determined upon completion of a subsequent habitat delineation by a registered biologist approved by the County, CDFG, and USFS to establish the total areas of off-site mitigation. USFS representatives shall be consulted and mitigation is likely to consist of the acquisition of private property. This would include the identification of suitable habitat within the forest for acquisition and dedication as open space. A biological monitor shall be present during the removal of the rock piles to monitor and relocate any rubber boas found. No construction within areas of the site with habitat suitable for the southern rubber boa shall occur until an off-site mitigation plan has been formalized and approved to the satisfaction of the County, CDFG and the USFS.

Jurisdictional "Waters of the State"

MM-C4 The proposed impacts to State-regulated waters as a result of the proposed project will be subject to the regulations set forth by the CDFG. Any alteration to the drainages will require a Section 1603 Streambed Alteration Agreement. An evaluation of mitigation alternatives shall include consideration of avoidance and/or on-site mitigation within the open space area located in the northeast portion of the project site. The CDFG shall require the project proponent to explore alternatives to reduce impacts and shall also require mitigation for all unavoidable impacts. This is anticipated to include on- or off-site replacement, or in lieu compensation, of CDFG jurisdictional streambed and associated riparian habitat at a ratio no less than 1:1. No construction on the site shall occur until mitigation for jurisdictional areas has been formalized, approved, or implemented to the satisfaction of CDFG such that impacts are reduced to a less-than-significant level.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the mitigation measures identified above, impacts to CDFG jurisdictional streams would be reduced to a less-than-significant level. Impacts to the southern rubber boa are still considered cumulatively significant after mitigation due to the loss of habitat.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES D. GEOLOGY AND SOILS

The following section provides a discussion of existing geologic and soil conditions and an analysis of potential impacts from implementation of the proposed project related to geologic hazards and slope stability. This section is based on and presents the information and findings contained in the limited geotechnical investigation report prepared by Leighton and Associates (June 27, 2002) for the proposed project, which is included as Appendix D of this Draft EIR. As indicated below under subsection 5, Mitigation Measures, the proposed project will be subject to further geotechnical review with a design-level investigation required prior to issuance of grading or building permits.

1. ENVIRONMENTAL SETTING

a. Geologic Setting

The project site is located in the San Bernardino Mountains within the Geomorphic Province of the Transverse Range of California. The mountains form a rectangular-shaped upland, approximately 65 miles in length and 20 miles in width. The Transverse Range is the highest range in California. The major part of the San Bernardino Mountains is a block of basement rocks, overlain in part by remnants of late Cenozoic valley deposits and basalt. The range has been uplifted by the San Andreas Fault Zone and the Pinto Mountain fault on the south. The range is bounded to the north by the North Frontal Fault Zone, which includes a series of thrust faults, such as the Grass Valley, Ord Mountain, and the Sky High Ranch faults. The southern front of the range is marked by a steep, heavily eroded escarpment, draining to the San Bernardino Valley.

The project site is located in the more gently sloping upland region of the range. Weathering and erosion have formed the current landscape on the site. Figure 14 on page 105 shows the regional geologic features in the area. The project site is underlain by surficial soil deposits and bedrock. Surficial soil deposits include artificial fill, alluvium, colluvium, and topsoil, which are not as dense as the underlying bedrock and are often prone to settlement under increased loads. Artificial fill soil, which consists of brown, dry, and loose silty sand with few angular gravel and burnt pieces of wood, is present along the unimproved dirt roads. Alluvium consisting of orange-brown silty sand with gravel and cobbles is present in the drainage canyons on-site; this layer of alluvium was observed to be approximately five feet or more in thickness. Colluvium consisting of light brown, sandy silts with trace amounts of clay was observed to be

six feet or more in thickness and commonly accumulates at the toes of natural slopes and in the hollows at the head of drainage swales and thins laterally to topsoil.

Granitic bedrock (quartz monzonite) has been mapped across the majority of the project site and the surrounding area. However, with the exception of a few outcrops, loose rocks on the surface and some existing shallow road cuts, bedrock was not readily observed on the surface but was mantled by the surficial soil deposits. As observed in other areas of the San Bernardino Mountains, the quartz monzonite is typically massive and very dense but locally moderately fractured. Decomposed granite (weathered rock), which was encountered during subsurface investigations conducted on-site, consisted primarily of tan to reddish brown micaceous silty sand with angular gravel. The rock becomes more fresh and dense at depth. No significant trend was noted in fractures and foliation of the bedrock on-site.

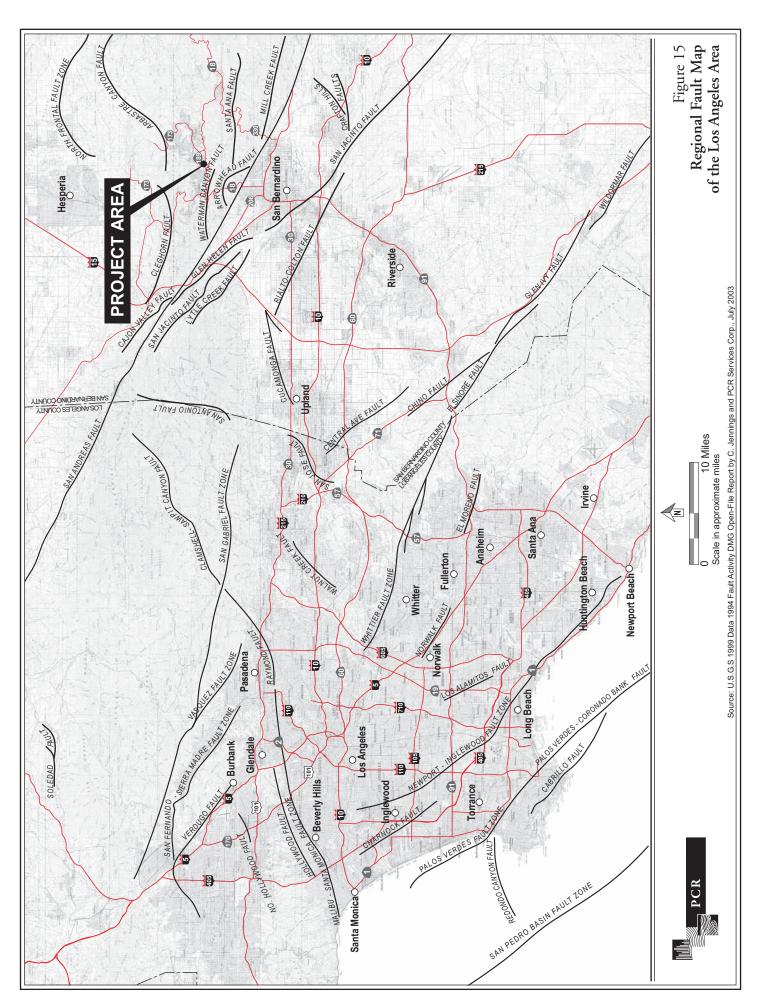
b. Faulting and Seismicity

The project site is not located in any Earthquake Fault Study Zones that have been established in the State of California or in an Earthquake Fault Zone shown in the County of San Bernardino Geologic Hazard Overlay for the Harrison Mountain Quadrangle. Based upon review of geologic references and literature, no evidence was found to suggest that active faults traverse the project site. Based upon available geologic literature, the closest known active fault (a fault which has moved in the last 11,000 years) is the San Andreas fault located approximately three miles south of the project site. The Waterman Canyon fault, which is believed to have last moved in the Late Quaternary (last 700,000 years), is located approximately two miles south of the project site. Figure 15 on page 107 shows the location of the project site with respect to various faults within the southern California region.

The nearest active faults to the project site include the southern and San Bernardino segments of the San Andreas fault, the Cleghorn fault, the San Bernardino segment of the San Jacinto fault, and the Northern Frontal Fault Zone. Their distances to the project site and their maximum earthquake magnitudes are summarized in Table 18 on page 108.

c. Liquefaction

Liquefaction is a phenomenon in which loose, saturated, granular soils temporarily behave similarly to a fluid when subjected to high intensity ground shaking. Liquefaction occurs when three general conditions exist: 1) shallow groundwater, 2) low-density silty or fine sandy soils, and 3) high intensity ground motion. Generally, the project site is not exposed to shallow groundwater or high intensity ground motion. Some of the surficial soils contain dry and loose



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Table 18

NEAREST ACTIVE FAULTS TO THE PROJECT SITE

Fault Name	Approximate Distance (miles)	Maximum Credible Earthquake (Richter Magnitude)
San Andreas – Southern Segment	3.1	7.4
San Andreas – San Bernardino	3.1	7.3
Cleghorn	3.4	6.5
Northern Frontal Fault Zone	4.7	7.0
San Jacinto-San Bernardino	10.3	6.7
North Frontal Fault Zone	7.7	7.7

Source: Leighton and Associates, Limited Geotechnical Investigation, Royal Adventure Camp, 1140 Pinecrest Road, East of Highway 189, North of Highway 18 in the Twin Peaks Area of Unincorporated San Bernardino County, California, June 27, 2002.

silty sand. However, the County of San Bernardino Liquefaction Hazard Overlay does not identify the site as being in an area prone to liquefaction.

d. Slope Stability

Natural slope stability in the San Bernardino Mountains is generally moderate to poor. Although the underlying bedrock is massive and very hard, the extreme relief and steep mass of slopes present within many areas of the range result in slope instability. Surficial soil slumps during heavy rain also occur with mud or debris flows occurring on steeper slopes.

In general, the natural slopes at the project site are more gently inclined than in many areas of the San Bernardino Mountains. The majority of the natural slopes on-site are inclined at 2.5:1 or flatter, whereas very steep (1:1 or steeper) 1,000- to 3,000-foot tall slopes are present off-site along the south-facing mountain front. The Geologic Hazard Overlay for the Harrison Mountain Quadrangle from the San Bernardino County General Plan indicates the site is located in an area with low to moderate susceptibility for landslides.

Evidence of shallow surficial slope failures and soil creep (slow movement of soil down a slope) was observed during site investigations conducted for the project. These failures were limited in area and involved failure of the shallow surficial soils that had accumulated on the sides of steeper drainages and ravines. Debris flows could also occur in these areas. Debris flows occur when surficial soils that are already saturated due to many days of antecedent rainfall, are subjected to rainstorms of high intensity.

e. Collapsible and Settlement-Prone Soils

Potentially collapsible and settlement-prone soils, including topsoil, colluvium, alluvium, and artificial fill, were observed on-site to depths approaching six feet. Deeper deposits of surficial soils may also be present.

f. Soil Rippability

Granitic bedrock underlying the project site is expected to be highly decomposed and fractured in the near subsurface, becoming dense to very hard with increasing depth. Surficial soils are readily rippable with standard heavy equipment.

g. Subsidence

Ground subsidence or lowering of the ground surface can occur as a result of natural processes or as a result of human activity, such as the withdrawal of underground fluids (generally groundwater and oil). The loss of support and volume at depth from fluid withdrawal results in the lowering of the ground surface. The project site is not located in an area reported to have experienced subsidence.

h. Expansive Soils

The soil on-site was visually classified as primarily being granular in nature. This type of soil has a very low to low expansion potential.

i. Regulatory Framework

(1) California Geologic Survey

The California Geologic Survey (CGS) provides guidance with regard to seismic hazards. The CGS's *Special Publications 117*, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* provides guidance for evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigation. As previously indicated, the project site is not located in any Earthquake Fault Study Zones that have been established in the State of California.

(2) County of San Bernardino

The County of San Bernardino Development Code (Title 8, Division 10, Chapter 2) establishes regulations to control existing and potential conditions of human-induced accelerated erosion in County areas that are within or adjacent to mountains and hillsides. The Development Code sets forth required provisions for project planning and design considerations (Section 810.0215), preparation of erosion and sediment control plans (Section 810.0220), runoff control (Section 810.0225), land clearing (Section 810.0230), and winter operations (Section 810.0235). Since the project site is located in the mountain area of the County, these sections of the Development Code would apply to the project to eliminate and prevent conditions of accelerated erosion that have led to, or could lead to, degradation of water quality, damage to property, loss of topsoil and vegetation cover, and increased danger from flooding and the deposition of sediments and associated nutrients.

2. THRESHOLDS OF SIGNIFICANCE

Although the general plan EIR includes thresholds of significance relating to geology and soils, Appendix G of the State CEQA Guidelines provides thresholds that are generally consistent but more comprehensive and detailed. Therefore, the thresholds provided in Appendix G of the State CEQA Guidelines are used as the basis for determining significant environmental impacts. Accordingly, a project may be deemed to have a significant impact on geology and soils if it would result in any of the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction; and/or
 - Landslides.
- Result in substantial soil erosion or the loss of topsoil.

- Be located on a geologic unit or soil that is unstable, or that would become unstable
 as a result of the project, and potentially result in on- or off-site landslide, lateral
 spreading, subsidence, liquefaction or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
 - Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

3. ENVIRONMENTAL IMPACTS

a. Methodology

The analysis of geology and soils uses significance thresholds as set forth in the County General Plan EIR as well as Appendix G of the CEQA Guidelines. As indicated in the *Final Environmental Impact Report for the San Bernardino County General Plan*, specific criteria for the classification of potential impacts associated with geologic hazards in the County have been established as part of that program-level document. Referencing the EIR for the County's 1989 General Plan update, significant impacts associated with geologic hazards are generally defined as those which directly or indirectly affect life, property or major public facilities (e.g., transportation and utility corridors).

b. Project Features

The proposed project would include installation of retaining walls throughout the project site. Generally, the retaining walls set back from Highway 189 would be no more than four feet in height. Other retaining walls around proposed structures and internal roadways would be between four to eight feet in height, depending on the steepness of the slope. These retaining walls would consist of modular concrete stacking blocks that are plantable, which would allow the wall to blend in with the surrounding forested environment.

c. Analysis of Geologic Impacts

D-1. Faulting and Seismicity. The project site would be exposed to strong seismic ground shaking. This is considered a *Less-Than-Significant Impact*.

Minor faults associated with uplift of the mountains are expected to be encountered during the course of project development. However, these faults are not expected to be a constraint to development.

As with all of southern California, the project site would be exposed to strong seismic ground shaking as a result of future earthquakes in the region. Design of the proposed structures in accordance with current Uniform Building Code (UBC) standards would reduce the potential for significant damage to structures resulting from strong seismic ground shaking. As such, faulting and seismicity in the region and in the project area would have a less-than-significant impact on the proposed development.

D-2. Liquefaction. Liquefaction potential on the project site is very low. Therefore, hazards associated with liquefaction are considered a *Less-Than-Significant Impact*.

Groundwater is not expected near the subsurface. In addition, the bedrock underlying the site is dense to very hard. However, surficial soils in areas that are proposed for development would require at least partial removal and recompaction. Therefore, the potential for liquefaction occurrence at the project site after site preparation and grading is very low. No significant impacts associated with liquefaction are anticipated.

D-3. Slope Stability. Slope failures and debris flows may potentially affect the proposed structures, particularly the fort building and the large amphitheater, and camp sites. This is considered a *Significant Impact*.

Based upon the dense, massive nature of the bedrock underlying the project site, natural slopes inclined at 2:1 or flatter are expected to be stable. However, as previously discussed, evidence of shallow surficial slope failures and soil creep (slow movement of soil down a slope) was observed in certain areas of the project site, where shallow surficial soils had accumulated on the sides of steeper drainages and ravines. Debris flows could also occur in these areas when surficial soils that are already saturated due to many days of antecedent rainfall, are subjected to rainstorms of high intensity. Potential debris source areas, including the steeper canyons northwest of the fort structure and slopes above the 1,000-seat amphitheater near the gun range may result in debris flows that could significantly impact the fort structure, the amphitheater, and tent camp sites.

D-4. Collapsible and Settlement-Prone Soils. Collapsible and settle-prone soils exist on the project site that could affect the integrity of proposed structures. This is considered a *Potentially Significant Impact* on the proposed structures.

Adverse settlement could occur if fill embankments or structures are placed directly on top of potentially collapsible and settlement-prone soils on-site. This could pose a potentially significant impact on the structural foundation and support for the various building components of the proposed project, including the dormitories, cabins, swimming pools, restroom facilities, driveways, and parking areas.

D-5. Soil Rippability. Excavation of bedrock or oversized materials could affect geological and soil conditions on the site. This is considered a *Less-Than-Significant Impact*.

Grading for the proposed project is estimated to involve 45,300 cubic yards of balanced cut and fill, including shallow cuts to establish design grades. Within these cuts, the soils would be readily rippable with standard heavy equipment. However, if deeper cuts are planned, hard bedrock that would be difficult to excavate may be encountered. Oversized materials (larger than 12 inches in dimension) could be encountered in bedrock cut areas requiring removal or placement in fill areas. Any placement of oversized materials and all aspects of grading will be undertaken as required by and in compliance with Appendix Chapter 33 of the California Building Code (CBC), As a result, excavation of bedrock or oversized materials is not anticipated to significantly impact geological and soils conditions on the project site.

D-6. Subsidence. The project area is not prone to subsidence. As such, subsidence would have no impact on project development.

As previously discussed, the project site is not located in an area prone to subsidence. The proposed project would not involve groundwater withdrawal to cause the loss of support and volume at depth from fluid withdrawal resulting in the lowering of the ground surface. Therefore, no impacts associated with subsidence are anticipated.

D-7. Expansive Soils. On-site soils are not classified as expansive. As such, expansive soils would have no impact on project development.

As previously mentioned, the soil on-site has a very low to low expansion potential. Therefore, no impacts associated with placement of structures on expansive soils are anticipated.

D-8. Septic Tanks. No septic tanks are proposed as part of the project. As such, no impacts would result from such uses.

Additionally, the proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, no impacts associated with such uses would occur.

4. CUMULATIVE IMPACTS

Impacts associated with geologic and seismic issues are typically confined to a project site or a very localized area and do not affect off-site areas associated with the related projects or ambient growth. Cumulative development in the area would, however, increase the overall potential for exposure to seismic hazards by potentially increasing the number of people exposed to seismic hazards. However, all projects are subject to established guidelines and regulations pertaining to seismic hazards. As such, adherence to applicable building regulations and standard engineering practices would ensure that cumulative impacts would be less than significant.

5. MITIGATION MEASURES

Prior to issuance of grading or building permits, the following mitigation measures shall be expanded and revised as necessary to support an equivalent or greater level of environmental protection based on a design-level geotechnical investigation completed to the satisfaction of the County Building and Safety Division:

Slope Stability

- **MM-D3(a)** Debris berms and/or basins should be constructed to protect improvements below debris source areas, including the steeper canyons northwest of the Fort Structure and slopes above the 1,000-seat amphitheater near the gun range.
- MM-D3(b) All manufactured slopes should be designed at 2:1 (horizontal to vertical) or flatter. In order to achieve good compaction at the slope face, fill slopes shall be overfilled a minimum of three feet and then cut back to compacted materials. After cutting back, the final slope should be rolled with compaction equipment where determined necessary by the geotechnical engineer.

MM-D3(c) All design cut slopes should be mapped in detail during excavation to confirm that adverse geologic conditions that could result in poor stability are not present on the slopes.

Collapsible and Settlement-Prone Soils

- MM-D4(a) Overexcavation of compressible surficial soils should be required during grading prior to placement of fill or construction of structural foundation in these soils. The actual depth and extent of required removals should be determined in the field during grading and construction based upon field observations.
- MM-D4(b) Loose compressible soils should be removed until firm native soil or bedrock is encountered. Removal operations should be required in the vicinity of structural improvements where construction with shallow foundations are planned or in areas designed with significant fill embankments.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the recommended mitigation measures, expanded or revised as necessary based on a design-level geotechnical investigation, significant geotechnical impacts associated with slope stability and collapsible and settlement-prone soils would not occur as a result of the proposed project.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES E. HAZARDS AND HAZARDOUS MATERIALS

The purpose of this section is to identify and evaluate the hazards and hazardous materials that may be generated and used by the proposed project. The analysis includes a discussion on fire hazards, hazards that may be associated with operation of the gun range, and the hazardous materials and wastes that may be generated by the gun range.

1. ENVIRONMENTAL SETTING

a. Hazards

A combination of climate, topography, vegetation, and development patterns creates high fire hazard risks throughout the County, especially in the many areas of wildland-urban interface located in foothills, and in mountainous areas³³ as applies to the project site. The primary wildland-urban interface areas are North San Bernardino, Highland, North Yucaipa, North Devore, Bear Valley, and those portions of the mountain area containing urban-type development, such as the project area. Fire hazards in the project area have been recently exacerbated due to a bark beetle infestation that has resulted in a number of dead and diseased trees. Overall, the County has a Fire Hazard Severity Scale of Class III, a rating assigned because critical fire weather occurs more than 9.5 days per year.³⁴

Wildland fire hazards are particularly acute in the County due to its Mediterranean climate. Prolonged dry periods from the late spring through the fall and seasonal Santa Ana winds increase local fire hazards. When wind velocities and temperatures in hillside areas are high with relatively low humidity, fire hazard conditions become severe, and fires are often difficult to extinguish. High winds can exacerbate fire conditions by supplying fresh oxygen, fanning and spreading flames and fire brands, increasing air temperatures, and dehydrating both air and available fuels. Turbulent and erratic wind conditions exemplified by a Santa Ana condition also hinder firefighters on the ground by causing unpredictable fire fronts. Many of

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³³ Public Services Group, Land Use Services Department, San Bernardino County General Plan, adopted July 1989 and revised May 1999.

³⁴ County of San Bernardino, Final Environmental Impact Report for the County of San Bernardino General Plan, May 1989.

California's most disastrous fires have occurred during extreme fire conditions that were precipitated by the onset of Santa Anas.³⁵

Topography in high fire hazard areas is characterized by slopes increasing to over 40 percent in the steep canyons, valleys, and narrow ridges. Canyons, ridges, and saddles reflect and deflect flame, and heat and wind cause vegetation on upper slopes to be preheated. Since fires can run uphill much faster than on level ground, the foothill and mountain areas have higher fire risks than flatter areas. Access for firefighters and equipment is also more difficult in steep slope areas.

Additionally, high fire risk areas often correspond to dense chaparral plant associations, which include scrubs that emit volatile oils when heated. Widely spaced chaparral, other plant associations and irrigated landscaping are somewhat less of a fire hazard. However, human use is the most critical factor in wildland and wildland-urban interface fires. According to the Task Force on California's Wildland Fire Problem, over 90 percent of fires involving vegetation are caused by people or their developments (such as machinery or power lines).³⁶

The Crest Forest Fire Protection District provides fire protection and emergency medical services to the mountain communities, including the project site and its vicinity, with two fully staffed engine companies. Stations 25 and 26 are staffed 24 hours and 365 days each year. The other six stations in the district are unmanned, staffed by paid call firefighters (PCF) available on an as needed basis. PCFs carry radio pagers and are dispatched to incidents where additional crews are required. Other than this unique responsibility, PCFs are normal mountains residents with regular full-time jobs.³⁷

The closest fire station to the project site is Fire Station 26, which is located at 731 Grandview Road in Twin Peaks, approximately one mile north of the project site. Multiple engines, including Rescue 26, OES 188 (Office of Emergency Services), and Engine 26, are currently assigned to this station. Rescue 26, a Paid Call engine, is a converted brush engine which has the ability to refill self-contained breathing apparatus tanks. OES 188 responds to mutual aid requests from other agencies in the event of a disaster or occurrence which cannot be handled by the regular local fire agency. Since it is also operating as a PCF engine, it responds to calls within the District. Engine 26 is a manned engine.³⁸

³⁶ *Ibid*.

³⁵ *Ibid*.

³⁷ Crest Forest Fire Protection District, http://www.cffd.org, accessed May 30, 2003.

³⁸ *Ibid*.

b. Hazardous Materials

Hazardous materials are generally substances which, by their nature and reactivity, have the capacity of causing harm or a health hazard during normal exposure or an accidental release or mishap, and are characterized as being toxic, corrosive, flammable, reactive, an irritant or strong sensitizer. The term "hazardous substances" encompasses chemicals regulated by both the United States Department of Transportation's (DOT) "hazardous materials" regulations and the Environmental Protection Agency's (EPA) "hazardous waste" regulations, including emergency response. Hazardous wastes require special handling and disposal because of their potential to damage public health and the environment. A designation of "acutely" or "extremely" hazardous refers to specific listed chemicals and quantities.

Activities and operations that use or manage hazardous or potentially hazardous substances could create a hazardous situation if accidental release of these substances occurred. Individual circumstances, including the type of substance, quantity used or managed, and the nature of the activities and operations, affect the probable frequency and severity of consequences from a hazardous situation.

Seventy-five percent of the Mountain area of San Bernardino County is covered by the San Bernardino National Forest. As such, the area contains a small number of hazardous waste generators and disposal sites relative to other areas of the County. In addition, a review of the Cortese List, which is updated annually by the California Environmental Protection Agency (Cal-EPA) pursuant to Government Code Section 65962.5, indicates that the project site is not included on any list of hazardous materials sites.³⁹ Given that the project site is undeveloped forested land with the exception of a few dirt fire roads and there appears to be no known history of site use that suggests potential for soil or water contamination, no issues associated with existing hazardous materials have been identified.

c. Regulatory Framework

(1) Hazards

(a) Crest Forest Fire Protection District

The Crest Forest Fire Protection District has established a set of fire protection planning requirements for the proposed project, including standard and non-standard conditions prior to

³⁹ California Department of Toxic Substances Control (DTSC), DTSC's Hazardous Waste and Substances Sites (Cortese) List, May 29, 2003.

project approval, site grading, issuance of a building permit, and project occupancy. These standard and non-standard conditions include, but are not limited to, the following:⁴⁰

Standard Conditions

- Private road maintenance, including but not limited to, grading and snow removal, shall be provided for prior to recording or approval. Written documentation shall be submitted to the Fire District. Private fire access roads shall provide an all weather surface with a minimum paving width of 20 feet.
- This development shall comply with Fire Safety Overlay conditions (Section 85.020220 of the County of San Bernardino Development Code) as adopted by County Ordinance 3341. These conditions relate to construction requirements, building separations, project design requirements, fuel modification areas, and erosion and sediment control. This development is located in Fire Review Area 2.
- Water systems designed to meet the required fire flow of this development shall be approved by the Fire District with two copies of the water system improvement plan for approval. Water systems shall be operational and approved by the fire department prior to any framing construction occurring. The required fire flow shall be determined by appropriate calculations, using the San Bernardino County "Guide for the Determination of Required Fire Flow." Water systems shall have a minimum of eight-inch mains, six-inch laterals, and six-inch risers.
- An approved turnaround shall be provided at the end of each roadway 150 feet or more in length. Cul-de-sac length shall not exceed 600 feet, except as identified in the development code and approved by the fire chief.
- This development and each phase thereof shall have two points of vehicular access for fire and other emergency equipment and for routes of escape which will safely handle evacuations as required by the development code.
- Private roadways or drives which exceed 150 feet in length shall be approved by the
 Fire District and shall be extended to within 150 feet of, and shall give reasonable
 access to, all portions of the exterior walls of the first story buildings. An access road
 shall be provided within 50 feet of all buildings if the natural grade between the
 access road and the building is in excess of 30 percent. Where the access roadway

Dick Parmelee, Fire Marshal, Crest Forest Fire District, Fire Protection Planning Requirements (File #01P000000084), September 26, 2001.

cannot be provided, an approved fire protection system or systems shall be provided as required and approved by the Fire District.

- Prior to any construction occurring on any parcel, the applicant shall contact the Fire
 District for verification of current fire protection development requirements. All new
 construction shall comply with the existing Uniform Fire Code requirements and all
 applicable statutes, codes, ordinances or standards of the Fire District.
- Prior to any framing construction occurring, all flammable vegetation shall be removed from each building site within a minimum distance of 30 feet from any flammable building material, including finished structure.
- A 100-foot fuel modification zone in compliance with County standard is required.
- Prior to framing construction, approved fire hydrants and fire hydrant pavement marker shall be installed. Fire hydrants shall be six-inch diameter with a minimum one four-inch and one 2.5-inch connection. The design of the fire hydrant and fire hydrant pavement marker shall be approved by the fire department. In areas where snow removal occurs or non-paved roads exist, the blue reflective hydrant marker shall be posted on an approved post three feet from the hydrant. All fire hydrant spacing shall be 300 feet with the exception of single family residential which may be increased to 600 feet maximum.

Non-Standard Conditions

- The use of fire circles/campfires will be by permit only from the Fire District and Department of Agriculture, USFS.
- Special use permit will be required for approval of the rifle range from the Fire District and Department of Agriculture, USFS.
- All fire apparatus access roads dedicated to San Bernardino County shall be designed to San Bernardino County Transportation Department standards and specifications.
- Fire apparatus access roads less than 26 feet shall either be designed to San Bernardino County Transportation Department standards and specifications or Crest Forest Fire District Guidelines. Plans shall be submitted to the Fire District for approval. Grading plans are required from the San Bernardino County Land Use Services, Building and Safety Department.
- No Buildings shall be built within the 100-foot designated fuel modification zone unless constructed to FR1 requirements and fire sprinkles installed.

- Fire sprinkler plans are required to be submitted for approval to the Fire District.
- Fire alarm system plans are required to be submitted for approval to the Fire District.
- An evacuation plan shall be provided for review and shall include procedures for evacuating the entire camp, including ground transportation out of the area.

(2) Hazardous Materials

Federal, state and local laws regulate the use and management of hazardous or potentially hazardous substances.

(a) Federal Regulations

The Federal hazardous waste laws are generally known as the Resource Conservation and Recovery Act (RCRA) of 1976. RCRA directed the Environmental Protection Agency (EPA) to establish regulations that would manage the generation, transport, treatment, storage, and disposal of hazardous wastes while simultaneously ensuring the protection of human health and the environment. The statute addresses the potential for contamination from the point of waste generation to the point of final disposal or destruction ("cradle to grave" tracking).

Ammunition containing lead pellets and bullets is not considered a hazardous waste subject to RCRA at the time it is discharged from a firearm because it is used of its intended purpose. However, spent lead pellets or bullets that are left in the environment are subject to the broader definition of solid waste contained in the RCRA statute. Consequently, to operate an outdoor gun range that is environmentally protective and complies with the intent of RCRA regulations, EPA established an integrated lead management program, which incorporates a variety of best management practices (BMPs) for use at outdoor shooting ranges. These BMPs create a four-step approach to lead management, as follows:

- Step 1: Control and contain lead bullets and bullet fragments;
- Step 2: Prevent migration of lead to the subsurface and surrounding surface water bodies;
- Step 3: Remove the lead from the range and recycle; and
- Step 4: Document activities and keep records. 41

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⁴¹ U.S. Environmental Protection Agency, Best Management Practices for Lead at Outdoor Shooting Ranges, EPA-902-B-01-001, January 2001.

(b) County of San Bernardino

The major categories of hazardous waste produced in the County include metal containing liquids, waste oil, oily sludges and baghouse waste. These wastes come from a variety of industries ranging from small businesses, such as automotive services and plating companies, to large industries like steel manufacturing.⁴² AB 2948 (Chapter 1504, Statutes of 1986), commonly known as the Tanner Bill, authorized counties to prepare Hazardous Waste Management Plans (HWMP) in response to the need for safe management of hazardous wastes. On March 31, 1987, the County of San Bernardino Board of Supervisors authorized the preparation of the County HWMP. The preparation of the HWMP included extensive public participation. Consistent with state law, an advisory committee was established to advise County staff and local government officials on issues pertaining to the management of hazardous wastes. The County HWMP was adopted by the County of San Bernardino Board of Supervisors and approved by the California Department of Health Services in February 1990.

The County HWMP serves as the primary planning document for the management of hazardous waste in San Bernardino County. The County HWMP identifies the types and amounts of wastes generated in the County; establishes programs for managing these wastes; identifies an application review process for the siting of specified hazardous waste facilities; identifies mechanisms for reducing the amount of hazardous waste generated in the County; and identifies goals, policies and actions for achieving effective hazardous waste management.⁴³

2. THRESHOLDS OF SIGNIFICANCE

A project would have a significant effect associated with hazards and hazardous materials if it would result in one or more of the following indicated source or sources for threshholds:

- Create a potential fire hazard for people, animal or plant populations;
- Impose pressure on the capacity of local or regional fire protection services such that new or substantially expanded services are needed;
- Create health risks from the construction or operation of facilities, including the use of camp fires and the gun range that constitute an actual or potential endangerment of public health or safety to persons on the site or in the project area;

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San Bernardino County General Plan, San Bernardino County Public Services Group, Land Use Services Department, p. II-B3-1, Adopted July 1989, Revised May 1999.

⁴³ *Ibid*.

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; and/or
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

3. ENVIRONMENTAL IMPACTS

a. Project Features

The proposed project would include a 50-yard gun range, which would be located on the southwestern portion of the project site. As presented in Chapter 2.0, Project Description, this gun range would be designed to exceed the minimum guidelines specified by the National Rifle Association (NRA) and to trap all ammunition within the range. The gun range would be situated within an 8- to 20-foot earthen berm with an 8-foot high log wall on top of the berm on all four sides to prevent over shots and ricochets and to muffle noise. The 20-foot height (depth) would be at the target end of the range. The following components would also be incorporated into the design of the gun range to prevent over shots and ricochets:

- A steel barrier on the roof over the shooting gallery,
- Deflector panels in front of the range structure,
- A high baffle located mid-way within the range,
- A bullet shield located at the end of the range, and
- Either a sand or grass floor for the firing lanes.

Guns and ammunitions would be stored in a concrete, locked ammunition vault inside the gun range. The proposed project's gun range design would exceed the minimum standards for design as established in the NRA's *Range Source Book*, and its range safety plan would be more stringent than the rules established in the Lytle Creek Firing Line Range Rules.

Additionally, the proposed project would include a 25-yard archery range on the southwestern portion of the project site, which has a natural 10-foot recession on one side and would create a natural buffer; the archery range would be enclosed with a four-foot split-rail fence. As an additional safety measure, there would be an eight-foot berm at the target end of the range.

As identified above, the Crest Forest Fire Protection District has established a set of fire protection planning requirements for the proposed project, including standard and non-standard conditions prior to project approval, site grading, issuance of a building permit, and project occupancy. These standard and non-standard conditions would be included as part of the project to the satisfaction of and with approval by the Fire District prior to the issuance of construction permits. The proposed project would include buildings that have fire truck access within 150 feet. Buildings over 4,000 square feet in size would be equipped with fire sprinklers. Most structures would have one-hour exterior firewalls or better. Hydrants would be spaced every 300 feet along driveways. Hose bibs would be located adjacent to all fire sources. In addition, the three proposed swimming pools would include an access road for vehicles and fire department connections for pumping of approximately 310,000 gallons of water in the event it is needed for fire fighting purposes. Additionally, all secondary emergency access gates would be outfitted with a "Knox Box", a high-security box system designed to give firefighters and emergency services immediate access to secured areas.

Additionally, a permanent 100-foot wide fuel modification zone would be placed around the perimeter of the project site to provide a firebreak and deter the spread of a potential forest fire. Removal of brush, plants, ground cover and trimming of tree branches from the ground to a height of 10 feet would establish the fuel modifications zone. Plant materials that accumulate within this zone would be cleared regularly to maintain accumulation to a minimum in accordance with the requirements of the Crest Forest Fire District. In addition, dead and diseased trees may need to be removed from the fuel modification zone and other portions of the project site to assist in the eradication of the bark beetle infestation and reduce the number of trees that are potent fuel for devastating wild fires. Approximately 50 fire circles within the camp would be located and placed in areas approved by the Fire District. Other than obtaining a permit to use the fire circles/campfires, no specific requirements regarding fire circle/campfire use have been specified by the Fire District. Conditions imposed on the project include an evacuation plan for the entire camp, subject to review and approval by the Fire District.

b. Analysis of Hazards and Impacts Associated with Hazardous Materials Use

(1) Hazards

E-1. Operational Hazards. Operation of the gun range and the archery range could pose a potential hazard to users and campers within the immediate vicinity of the ranges. This is considered a *Less-Than-Significant Impact*.

Operation of the gun range and the archery range could pose a hazard to range users and campers within the immediate vicinity of the gun and archery ranges. The design of the ranges and supervision by qualified personnel are focused on containing all properly and normally shot

bullets, arrows, and ricochets within the ranges. However, no open range can guarantee that a stray shot or ricochet would be completely prevented. Consequently, the potential for an accident involving the users of the gun and archery ranges and campers within their immediate vicinity would exist. The proposed project would include the project features identified above to create controls that would prevent a normally shot bullet from any normal range shooting position, whether prone, sitting, or standing and with assumptions as to natural ricochet patterns, from exiting the range. In addition, qualified range officers approved by the Royal Rangers District office and certified by the NRA and the NMLRA would be responsible for the safe operation of the gun range at all times.

With the incorporation of the project design features identified above, proper supervision, and required approval of a special use permit for the rifle range from the Fire District and USFS, the operational hazards associated with the proposed gun range and archery range are considered less than significant. In addition, the proposed project would be subject to the regulatory requirements specified by the Crest Forest Fire Protection District described above, including establishment of a fuel modification zone in compliance with County standards and obtaining a permit for the operation of the gun range. Compliance with these requirements is mandated by law to ensure that wildland fires, fire hazards, operational hazards associated with the use of the gun range are reduced to less-than-significant levels.

E-2. Fire Hazards. Because the project site is located in a high fire hazard area, the proposed project would be subject to a high risk of exposure to fire incidents. However, this would be considered a *Less-Than-Significant Impact*.

The proposed project would result in the exposure of more people and structures to potential wildland fire hazards. An impact to fire service capacity is typically associated with an increase to the overall population of an area. Current fire services provided by Fire Station 26 may be impacted by the proposed project. Existing capacity levels provided at this station and other stations operated by the Crest Forest Fire Protection District may be impacted as a result of the development of a camp facility serving a maximum of 1,048 people. However, compliance with the requirements established by the Crest Forest Fire Protection District for the project site would reduce impacts to less-than-significant levels. In addition, the Fire district retains paid call firefighters (PCF) to supplement its services on an as-needed basis. With readily available PCFs, the Fire District would be able to dispatch additional crews, where required.

The proposed project would involve the use of fire circles, which could increase the potential for wildland fires. These fire circles would be located and placed in areas approved by the Crest Forest Fire Protection District.

As identified above, the Crest Forest Fire Protection District has established a set of fire protection planning requirements for the proposed project, including standard and non-standard conditions. Implementation of these conditions would assist in fire protection and prevention to reduce impacts to fire protection services and to reduce the risk of exposure to wildland fire hazards. However, there is no guarantee that wildland fires would be completely prevented from the use of the fire rings at the tent camp sites on the project site. Compliance with requirements established by the Crest Forest Fire Protection District and USFS would reduce potential for fire accidents and the spread of fire. Consequently, the potential for wildland fires associated with the use of the fire rings would exist but is considered less than significant.

(2) Hazardous Materials

E-3. Soil Contamination. Operation of the gun range may result in soil contamination associated with the use of lead pellets/bullets. This would be considered a *Significant Impact*.

Operation of the gun range would have the potential to create soil contamination associated with the use of ammunition, which may contain lead materials. Lead contamination in soils at shooting ranges from the use of lead pellets/bullets as ammunition is under increasing scrutiny as a potentially significant source of lead pollution. Lead pellets/bullets are mainly composed of lead. When lead pellets and bullets come into contact with soil, they may be exposed to oxidation, carbonation, and hydration reaction, and ultimately could be transformed into dissolved and particulate species, potentially diffused into the environment at a decomposition rate of approximately one percent per year.

Particulate metallic lead, lead oxides and carbonates, or other compounds produced from pellet weathering may be transported into soils and surface or ground water, resulting in the elevation of lead concentration in soils and waters at shooting ranges. The dissolution and mobility of lead derived from lead bullets and shots are dictated by a number of geochemical process including oxidation/reduction, precipitation/dissolution, and adsorption/desorption. Conditions causing increased risk of lead mobility include low soil or surface water pH, high amounts of annual precipitation, and the absence of organic matter in the soil.

High annual precipitation increases the time during which lead is in contact with water, resulting in an increased risk of lead transportation in storm runoff. Vegetative cover slows surface runoff, and high content of soil organic matter facilitates lead sorption, reducing its mobility. Similarly, a high clay content in soils reduces groundwater flow and adsorbs lead, reducing its concentration in groundwater. On the other hand, if a soil mainly consists of silica sand, gravel, or fractured granite, soluble lead in ground water may be transported over long distances.

Soil pH is one of the most important factors affecting the mobility of lead. At a neutral pH, lead is relatively insoluble. As water becomes more acidic (decreasing pH), lead solubility tends to increase. When storm water, which is normally slightly acidic, comes in contact with lead contaminated soils, the lead can be dissolved into the water and transported to nearby groundwater or surface water. If sufficient lead is mobilized, environmental receptors can be affected, and risk to human health could occur if these sources are used for drinking water.

Consequently, without proper control and management of spent ammunition comprised of lead waste, the accumulated pellets and bullets could potentially endanger the environment and/or human health, which could result in a significant impact.

4. CUMULATIVE IMPACTS

There are no other proposed major developments in the vicinity of the project site. Regional growth is anticipated; however, this growth is not expected to result in local cumulatively significant impacts related to hazards and hazardous materials. Minor home remodeling projects, potential future improvements to Pinecrest Christian Conference Center, or infrastructure repair projects may occur in the project area, which could involve the use of hazardous materials or result in the release of potentially hazardous materials. However, these projects would be required to handle hazardous materials in accordance with the regulations and manufacturers' instructions, which would reduce the likelihood of impacts related to hazards and hazardous materials. In addition, none of these projects are expected to present hazards to the public, due to increased exposure to lead associated with the use of a gun range. Thus, no cumulative impact related to hazards and hazardous materials would occur.

5. MITIGATION MEASURES

- MM-E3 The proposed gun range shall incorporate EPA's recommended *Best Management Practices for Lead at Outdoor Shooting Ranges* into its Safety Plan. Prior to operation of the gun range, the Safety Plan shall be subject to review and approval by the USFS, San Bernardino County Sheriff's Office, and Crest Forest Fire Protection District. The Plan shall incorporate, but not be limited to, the following requirements;
 - Spent projectile shall be periodically collected from traps and recovered (e.g., sifted) from impact areas. The frequency of collection shall be dependent upon the level of range activity.

- Workers conducting lead collection activities shall be properly trained in lead abatement hazards and procedures.
- Gun range wastes shall be segregated to facilitate reclamation or recycling.
- Containers used to accumulate spent projectiles and cartridges to be recycled or reclaimed shall have covers and be labeled to identify contents and intended disposition (i.e., Spent Bullets to be Reclaimed).
- Used gun cleaning solvents and oily and dirty rags shall be properly handled and stored.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

As indicated above, compliance with regulatory requirements would ensure that significant hazard impacts associated with the use of the gun range and fire circles would not occur as a result of the project, and no mitigation measures are required. In addition, significant impacts associated with the gun range wastes (hazardous materials) would be reduced to less-than-significant levels with implementation of the recommended mitigation measures identified above.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES F. HYDROLOGY, WATER QUALITY, AND WATER SUPPLY

This section identifies and evaluates the potential impacts of the proposed project on hydrology, water quality, and water supply. The Crestline Village Water District (CVWD) Urban Water Management Plan is also discussed. The analysis is largely based on the results of the hydrology report and the water use analysis prepared for the proposed project, which are included in Appendix E of this Draft EIR. In addition, this section also presents project-specific information provided by CVWD.

1. ENVIRONMENTAL SETTING

a. Hydrological Setting

The project site and vicinity lie on the Santa Ana River and the Mojave River watershed boundary. The majority of the project site lies within the Mojave River watershed, which is located entirely within the County and includes approximately 1,600 square miles of total drainage. Approximately 210 square miles of this drainage area are located in the San Bernardino Mountains, which are the headwaters for the Mojave River system. Elevations within the watershed range from approximately 8,500 feet above mean sea level (amsl) at Butler Peak (approximately 15 miles east of the project site) in the San Bernardino Mountains to 1,400 feet amsl at Afton Canyon near the terminus of the Mojave River (approximately 40 miles northeast of Barstow just east of Interstate 15).

The drainage tributary area, which covers the project site and its vicinity, lies within the Mojave River watershed at elevations ranging between 5,200 feet and 6,200 feet. The project site is undeveloped, with the exception of a few dirt fire roads, and consists mainly of steep slopes and forested terrain. The general runoff sheet flows in a westerly direction towards Lake Gregory. Currently, overall peak flows generated on the project site, which run westerly down Highway 189, range from 75.6 cubic feet per second (cfs) and 120.8 cfs near the northern end of

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Maxwell, Christopher R., A Watershed Management Approach to Assessment of Water Quality and Development of Revised Water Quality Standards for the Ground Waters of the Mojave River Floodplain, 2000.

the project site, to a maximum of 177.0 cfs and 288.0 cfs near the southern end of the project site during a 10-year flood event and a 100-year flood event, respectively.⁴⁵

b. Surface Water Quality

Surface water quality can be affected by a number of variables, including the following: (1) land use; (2) hydrology; (3) meteorology; (4) geology; and (5) soils. Land uses may affect surface water quality based on associated activities; for example, a recreational facility generates little in the way of exterior pollutants which can be washed away by runoff, whereas a surface parking lot has deposits of oil, gasoline, and other pollutants that can be washed away by runoff. Meteorology may affect surface water quality through the quantity and intensity of storm events, which determine to what extent pollutants are washed away by runoff. Geology and soils may affect surface water quality in that they determine infiltration and runoff velocity. The more infiltration of runoff into the soil, and the slower the runoff (i.e., as in running over a flat surface instead of downhill), the less ability the runoff has to cause erosion and carry sediments and pollutants.

In receiving waters, excess sediments can cause high turbidity and rapid accumulation of sediments in lakes and ponds, with adverse impacts on biological organisms. In developed areas, toxins, such as zinc, copper, and lead, which can cause toxic effects in high concentrations, are most commonly associated with surface runoff. Additionally, other toxic elements, especially those associated with hazardous waste, can be present within surface flows.

c. Water Supply

The project site is located within the service area boundaries of the Crestline Village Water District (CVWD), which serves a five-square mile area in the Crestline-Lake Gregory area of the San Bernardino Mountains. The area is a mountain resort district where development is constrained by natural conditions, as well as local planning policies. CVWD served over 4,800 active connections in 2000, of which 96 percent were general/residential. The remaining four percent of the connections were commercial/governmental. CVWD has no industrial customers. Based on County land use plans and U.S. Forest Service management policies, the full buildout of the CVWD service area is estimated at 8,100 dwelling units, 95 acres of commercial use, and 104 acres of institutional uses. CVWD's sphere of influence covers 12 square miles and includes areas served by other water purveyors.⁴⁶

⁴⁵ Tetra Tech, Inc., Hydrology Report for Royal Rangers Adventure Camp, March 2002.

⁴⁶ Crestline Village Water District, Final Urban Water Management Plan, June 2001.

CVWD has approximately 17 well sites, which produced 16.8 million cubic feet of water in 2000, and also buys supplemental water (19.4 million cubic feet in 2000) from the Crestline-Lake Arrowhead Water Agency (CLAWA). CVWD operates 13 water storage tanks and approximately 90 miles of water lines; CVWD implements an on-going program of main line replacement and other improvement to older components of its system.⁴⁷ In addition, CVWD has an on-going program of locating and developing additional local wells, using technical assistance and surveys from qualified hydrogeologists. One of CVWD's existing local wells in the project area and CLAWA's metered turnouts for delivery of supplemental water to CVWD are located northwesterly of the project site on the opposite side of Highway 189. Water service to the project site would be provided from CVWD's Pinecrest Pressure Zone, which is supplied water from both local wells and CLAWA's metered turnouts.48

CVWD has a 254,000-gallon water storage tank that is located immediately adjacent to the project site and east of the proposed fort building. This site is comprised of 4.1 acres, which have been dedicated to CVWD and is located immediately adjacent to the project site. The 4.1acre site currently consists of the existing 254,000-gallon water tank, unpaved fire roads, and undeveloped coniferous forest. As part of its UWMP, CVWD has projected future construction of three new water storage tanks with a total capacity of approximately 1.75 million gallons to handle future water demand in CVWD's Pinecrest Pressure Zone, including demand forecasted for the project site. One or more of these tanks is proposed to be located adjacent to the project site and CVWD's existing water storage tank.

d. Regulatory Framework

(1) Hydrology and Water Quality

Regulatory and permitting processes have been established to control the quality of water runoff. In 1972, the Federal Water Pollution Control Act, also referred to as the Clean Water Act (CWA), was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful, unless a National Pollutant Discharge Elimination System (NPDES) permit authorizes the discharge. The Lahontan Regional Water Quality Control Board (RWQCB) currently administers the NPDES permit for the project area and the Lahontan Region, which primarily covers the eastern portion of California from the Oregon border to the northern Mojave Desert east of the Sierra Nevada crest.

Ibid.

Albert A. Webb Associates, Memorandum Regarding the Proposed Royal Rangers Camp – CVWD Water Service, September 16, 2003.

The proposed project will be required to comply with the NPDES General Construction Activity Storm Water Permit (NPDES No. CAS000002). This permit, which was adopted by the State Water Resources Control Board (SWRCB), regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least five acres of total land area. This General Permit authorizes the discharge of storm water to surface waters from construction activities. It prohibits the discharge of materials other than storm water and authorized non-storm water discharges and all discharges that contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations (CFR) 117.3 or 40 CFR 302.4 unless a separate NPDES Permit has been issued to regulate those discharges.

The NPDES General Construction Permit requires that all developers of land, where construction activities will occur over more than five acres, do the following:

- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation;
- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP), which specifies best management practices (BMPs) that will reduce pollution in stormwater discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standards; and
- Perform inspections and maintenance of all BMPs.

In order to obtain coverage under the NPDES General Construction Permit, a project applicant must submit a Notice of Intent (NOI) to the SWRCB and prepare a SWPPP. BMPs within the SWPPP typically regard minimization of erosion during construction, stabilization of construction areas, sediment control, control of pollutants from construction materials, as well as post-construction storm water management (e.g., the minimization of impervious surfaces, treatment of storm water runoff, etc). The SWPPP also must include a discussion of the program to inspect and maintain all BMPs.

(2) Water Supply

The California Urban Water Management Planning Act requires every municipal water supplier that serves more than 3,000 customers or provides more than 3,000 acre-feet of water per year to prepare and adopt an Urban Water Management Plan (UWMP). UWMPs are required to include estimates of past, current, and projected potable and recycled water use, identify conservation and reclamation measures currently in practice, describe alternative conservation measures, and provide an urban water shortage contingency plan.

The requirements for a UWMP were recently amended by Senate Bill (SB) 610 (Costa) and signed into law by Governor Gray Davis in October 2001. Under SB 610, an urban water supplier (i.e., CVWD) responsible for the preparation and periodic updating of a UWMP (i.e., CVWD Urban Water Management Plan) must describe the water supply projects and programs that may be undertaken to meet the total project water use of the service area. If groundwater is identified as a source of water available to the supplier, SB 610 requires additional information to be included in the UWMP such as: (1) a groundwater management plan; (2) a description of the groundwater basin(s) to be used and the water use adjudication rights, if any; (3) a description and analysis of groundwater use in the past five years; and (4) a discussion of the sufficiency of the groundwater that is projected to be pumped by the supplier. Similarly, Assembly Bill (AB) 901, which was also signed into law by Governor Davis in October 2001, requires UWMPs to contain information specifically pertaining to the quality of water supply sources.

In addition to requirements related to UWMPs, SB 610 recognizes the need to link water supply and land use planning as currently required by Section 10910 of the Water Code. Under certain circumstances, a city or county is required to request, in conjunction with a development project, a water supply assessment containing specific information from the water service provider. Under SB 610, it is the responsibility of the water service provider to prepare a water supply assessment requested by a city or county for any "project" defined by Section 10912 of the Water Code that is subject to CEQA. If the provider determines that water supplies are, or will be, insufficient, plans must be submitted for acquiring additional water supplies.

Similarly, SB 221 (Kuehl), a companion bill to SB 610, modifies state law (i.e., the Government Code, Subdivision Map Act and the Business and Professions Code) to focus on the link between water supply and land use planning, particularly for new large projects in non-urban areas (i.e., under certain conditions, approval of a subdivision map is prohibited unless the legislative body of a city or county provides written verification from the water service provider that a sufficient water supply is, or will be, available).

2. THRESHOLDS OF SIGNIFICANCE

Appendix G of the State CEQA Guidelines provides thresholds for determining significant environmental impacts. A project may be deemed to have a significant impact on hydrology, water quality, and water supply if the project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a

lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onor off-site;
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Substantially degrade water quality;
- Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; and/or
- Not have sufficient water supplies available to serve the project from existing entitlements or resources, or if new or expanded entitlements are needed.

3. ENVIRONMENTAL IMPACTS

a. Methodology

A hydrology report for the proposed project was prepared by Tetra Tech, Inc. The hydrology computations were prepared following the San Bernardino County Flood Control Hydrology Manual. The 100-year frequency was used for the protection of the proposed buildings and the drainage of sump areas, and a 10-year design was used for on-site storm drain and location of drainage facilities. The time of concentrations and runoff computations were derived from the preparation of a Rational Method Hydrology Computer Program Package, San Bernardino County Hydrology Criterion, as incorporated in the Advanced Engineering Software (AES) Package 2000.

A water use analysis for the proposed project was prepared by AG Mechanical to estimate the quantity of water that would be used by the proposed project. The water use

analysis provided a breakdown of the water usage by the fort building, different camp sessions, and the swimming pools.

b. Project Features

The proposed project would include installation of culverts, wherever necessary, to avoid flooding of developed areas on-site. On-site surface flow would be controlled through the use of these culverts to redirect surface water flows away from the proposed structures. These culverts would be engineered in conjunction with the development of building plans.

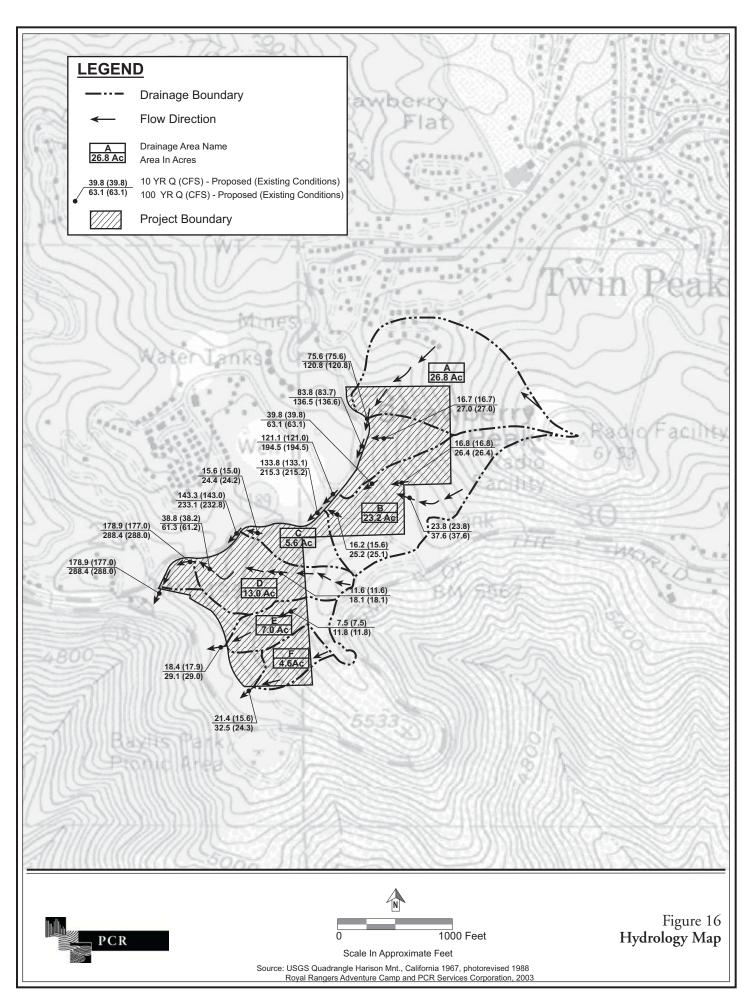
c. Analysis of Hydrology and Water-Related Impacts

(1) Hydrology

F-1. Construction and Operational Impacts on Site Hydrology. Construction activities and ground disturbance associated with project development may impact surface water flow. This would be considered *Less Than Significant*.

The project would involve construction activities and ground disturbance on approximately 66 percent of the 50.31-acre project site. As construction activities would occur over more than one acre, the project would require submittal and approval of a SWPPP to address erosion control and water quality measures during and after construction in order to obtain a NPDES construction general permit. As further described below under Subsection (2), Surface Water Quality, F-3, Construction, this permit process requires implementation and monitoring of BMPs to support elimination or reduction of pollutants to levels that comply with applicable water quality standards and do not cause environmental harm. Thus, construction-related impacts to hydrology would be less than significant.

The project would result in the conversion of approximately 12 acres of undeveloped land to impervious surfaces (paved surfaces and building footprints); the remaining 48 acres would remain pervious as they would remain unpaved. The results of the hydrology analysis prepared for the proposed project showed that the increase in impervious surfaces would have a negligible impact to the overall peak flows. As shown in Figure 16 on page 136, overall peak flows toward Highway 189 would result in a net increase of up to 1.9 cfs during a 10-year flood event and up to 0.4 cfs during a 100-year flood event. Overall peak flow towards Highway 18 near the southeastern portion of the project site would result in a net increase of 5.8 cfs during a 10-year flood event and 8.2 cfs during a 100-year flood event. As concluded in the hydrology report and based on the net nominal increases in peak flow, the impact of the proposed project to



the existing drainage pattern would be minimal. The proposed structures and camp facilities would not significantly impact major drainage courses.⁴⁹ As identified in Section 3.C, Biological Resources, a total of approximately 4,124 feet of drainages were measured on-site. As identified in the project features, on-site surface flow would be controlled through the use of culverts to redirect surface water flows away from the proposed structures and avoid flooding of on-site structures.

Highway 189 would create a barrier to the site drainage. Two options are feasible to allow drainage from the project site to discharge into the natural drainage swale on the other side of the highway to the west. The first option is to build an underground crossing at a few selected locations. The second option is to collect the runoff along the road and build an underground crossing at the southwest corner of the project site. A typical underground crossing could be provided through a culvert generally built through trenching, backfill, and replacement of the roadway surface.⁵⁰

(2) Surface Water Quality

F-2. Construction Impacts on Water Quality. Construction of the project could temporarily increase pollutant concentrations in surface water. This would be considered *Less Than Significant*.

Construction activities associated with the proposed project could temporarily increase the amount of suspended solids from surface flows derived from the project site during a storm event due to erosion of exposed soil and could temporarily increase the amount of non-sediment pollutants from the site due to contact of stormwater with construction materials. However, the proposed project would be required to prepare a NOI and SWPPP to comply with the State NPDES General Construction Permit as well as to comply with RWOCB requirements regarding construction activities, including erosion control. As part of these requirements, BMPs would be implemented that would serve to minimize sedimentation, reduce or eliminate other pollutants in stormwater runoff, and reduce or eliminate non-storm water discharges. The implementation of traditional engineering erosion control methods and BMPs (e.g., proper grading techniques, appropriate sloping of the construction site, sand bagging, drainage swales, regular watering of disturbed areas), which constitute standard conditions of grading permit approval, would effectively control fugitive dust and sediment transport during all construction operations and to control the discharge of sediment into the area's storm drain system. Therefore, implementation of these requirements would reduce any potentially significant water quality impacts on receiving waters to less-than-significant levels.

⁴⁹ Tetra Tech, Inc., Hydrology Report for Royal Rangers Adventure Camp, March 2002.

⁵⁰ Ibid.

F-3. Operation Impacts on Water Quality. Project operations could increase pollutant concentrations in surface water. This would be considered *Less Than Significant*.

Operation of the proposed project could increase pollutants in stormwater runoff. These pollutants would typically be limited to trash and debris, although additional pollutants associated with surface parking areas could include oil, grease, and heavy metals such as copper. In addition, the use of the gun range may also increase lead concentrations in the soil and groundwater. However, the proposed project would be required to comply with RWQCB requirements and regulations to reduce or eliminate pollutants in stormwater runoff. Accordingly, the proposed project would not have a significant impact on surface water quality as it is not anticipated to create pollution, contamination, or nuisance or cause regulatory standards to be violated.

(3) Water Supply and Storage

F-4. Water Usage. The proposed project would generate new demand for water that would be within the demand forecasts considered in the CVWD UWMP. While adequate water supplies would be available to serve the proposed project based on the UWMP, existing water storage capacity would not be sufficient to serve the project. Therefore, impacts to water storage are considered to be *Significant*.

According to SB 610, any development that uses an equivalent amount or more water than a 500-unit residential development must prepare a water supply assessment to be in compliance with the bill. Although zoning for the project site would limit development of residential uses to a maximum of 155 units, development of a 500-unit residential development has been used as the benchmark to establish whether the project requires a water supply assessment in conformance with SB 610. According to the CVWD UWMP, a 500-unit residential development is estimated to use approximately 100 acre-feet of water per year based on a typical unit use of 0.2 acre-feet of water per year.⁵¹

A water use analysis was prepared for the proposed project to estimate the amount of water that would be consumed by the different components of the project. This analysis estimated that approximately 9.5 acre feet of water would be used by the proposed project, including camp participants, permanent staff, the proposed 248-bed dormitories at the fort, and the three swimming pools, on an annual basis, as shown in Table 19 on page 139. When

⁵¹ Crestline Village Water District, Final Urban Water Management Plan, June 2001.

Table 19
ESTIMATED WATER CONSUMPTION OF THE PROPOSED PROJECT

Type of Use	Consumption Factor	No. of Users	No. of Days	Total Consumption	
				Gallons/Yr	Acre Ft/Yr
Permanent Staff	110	14	365	562,100	1.7
Camper/Staff					
Southern Pow Wow	50 gallons/person	880	3	132,000	0.4
Central Pow Wow	50 gallons/person	880	3	132,000	0.4
Eastern Pow Wow	50 gallons/person	440	3	66,000	0.2
FCF Camp	50 gallons/person	440	4	88,000	0.3
Family Camp	50 gallons/person	660	30	990,000	3.0
Summer Camp	50 gallons/person	220	20	220,000	0.7
National Training Camp	50 gallons/person	110	4	22,000	0.1
Sectional Camp	50 gallons/person	110	18	99,000	0.3
School Science Sessions	50 gallons/person	250	48	600,000	1.8
Subtotal Camper/Staff				2,349,000°	7.2
Fort Use					
Kitchen (meals)	1.22 gallons/meal	300	48	17,568	0.1
Kitchen (food preparation)	100 gallons/day		48	4,800	0.0
Laundry	32 gallons/wash	12	48	18,432	0.1
Subtotal Fort Use	, and the second			40,800	0.13
Pool Use					
Main Pool ^b				246,109/2 ^c	0.4
Wading Pool ^d				41,517/2 °	0.1
Slide/Splash Pool ^e				22,442/2 ^c	0.0
Yearly Water Loss f				3,198	0.0
Subtotal Pool Use				158,232	0.5
Total Project Usage				2,548,032	9.5

^a Includes 300 campers and staff utilizing the fort building.

Source: Hogle-Ireland, Inc. and AG Mechanical Engineering, Inc., Water Use Analysis & Executive Summary, March 19, 2003; PCR Services, 2003..

compared to a 500-unit residential development, the proposed project would use considerably less water and, as such, would be well below the benchmark that would require a water supply assessment in conformance with SB 610. In addition, the CVWD UWMP identified the Pinecrest area as one of three areas where significant developments, such as the proposed

^b Main pool is estimated to handle 32,900 cubic feet of water (4,700 square feet with an average depth of 7.0 feet).

^c Assumes that the pools would be drained and refilled once every two years.

 $[^]d$ Wading pool is estimated to handle 5,550 cubic feet of water (3,700 square feet with an average depth of 1.5 feet).

^e Slide/splash pool is estimated to handle 3,000 cubic feet of water (1,000 square feet with an average depth of 3.0 feet).

f Loss of water due to splashing and evaporation is assumed to be five percent.

project, are anticipated within CVWD's current service boundary. According to the CVWD UWMP, future supply is expected to be adequate to satisfy future demand in CVWD's service area. ⁵² Well production is expected to stabilize at approximately 20 million cubic feet by the year 2005, increasing slightly in the future. It is also expected that supplemental water purchases from CLAWA would increase as needed to meet the total demand. ⁵³

The proposed project would require a water system that can provide 2,000 gallons per minute (gpm) fire flow plus reserves at 20 pounds per square inch (psi) for a minimum two-hour duration, in accordance with the Crest Forest Fire Protection District requirements (the County standard is 750 gpm at 20 psi for two hours).⁵⁴ The swimming pools would be utilized to provide an additional 300,000 gallons for fire fighting purposes. However, even with this source, the existing CVWD 254,000-gallon water storage tank immediately adjacent to the project site and east of the proposed fort building would not have sufficient capacity to meet the fire flow requirement for the proposed project. Therefore, the proposed project would have a significant impact on water storage in the area.

As previously indicated, CVWD's UWMP includes a proposal for future construction of an additional water storage tank at their property adjacent to the project site in order to handle future water demands in CVWD's Pinecrest Pressure Zone. CVWD is now proposing installation of a 750,000-gallon water storage tank within the 4.1-acre site to serve the project and other projected needs. The new tank is expected to be approximately 72 feet in diameter and 26 feet in height.⁵⁵ In the future, depending on the actual demand that is realized over time, a third tank may be installed to provide the capacity that is ultimately needed in this zone of the CVWD service area.⁵⁶

An existing main water line easement running through the proposed location of the fort building would be relocated and upgraded as required. The CVWD has suggested the new location of the water line to be along the roadway around the fort building and back to the original easement at proposed Parking Lot A, as shown in Figure 4 on page 12 in Section 2.3, Project Characteristics.

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⁵² Albert A. Webb Associates, Memorandum Regarding the Proposed Royal Rangers Camp – CVWD Water Service, September 16, 2003.

⁵³ Crestline Village Water District, Final Urban Water Management Plan, June 2001.

⁵⁴ Crestline Village Water District, Public Water Service Certification, May 7, 2001.

⁵⁵ Hunt, Norman, General Manager, Crestline Village Water District, personal communication, October 8, 2003.

⁵⁶ Ibid.

4. CUMULATIVE IMPACTS

There are no other proposed major developments in the vicinity of the project site. Any future projects in the project area would be subject to NPDES permit requirements and RWQCB regulations and evaluated individually to determine appropriate measures to avoid impacts to hydrology and surface water quality. In addition, the CVWD UWMP estimated that future supply and storage would be adequate to satisfy future demand in CVWD's service area. Thus, cumulative impacts to hydrology, surface water quality, and water supply and storage would be less than significant.

5. MITIGATION MEASURES

MM-F4

To address the project's need for water storage, the applicant shall pay a fair-share cost to the CVWD for construction of an approximately 750,000-gallon water storage tank and a connection pipeline. The water storage tank would serve the site as well as future water storage needs within CVWD's Pinecrest Pressure Zone. The water storage tank shall be located next to CVWD's existing 254,000-gallon water storage tank immediately adjacent to the project site and east of the proposed fort building. No occupancy of the site as a campground shall occur until these improvements are put in place by CVWD and are operational to the satisfaction of the Crest Forest Fire Protection District.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

As indicated above, compliance with regulatory requirements would ensure that impacts to hydrology and surface water quality would not occur as a result of the project, and no mitigation measures are required. No significant impacts to the area's water supply are anticipated to occur.

Implementation of Mitigation Measure MM-F4 would reduce impacts to the area's water storage to a less-than-significant level, and, as such, no significant impacts to water storage would occur.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES G. LAND USE

The purpose of this section is to identify and evaluate the type and pattern of land use associated with the proposed project with respect to existing uses in the surrounding area, as well as the project's consistency with applicable plans and policies. The analysis also focuses on whether the proposed uses would be compatible with existing uses.

1. ENVIRONMENTAL SETTING

a. Existing Land Uses

The proposed project site is a 50.31-acre "butterfly"-shaped parcel of land located on the east side of Highway 189 at Pinecrest Road southeast of Twin Peaks and north of its junction with Highway 18. The site is largely undeveloped and is comprised of hilly to steep mountain terrain with montane coniferous forest covering approximately 70 percent of the site area. It has been estimated that the site currently contains approximately 6,750 trees of six or more inches in diameter. The limited improvements on the site include unpaved fire roads. In addition, several remnants of previous uses have been identified on the site, including an early 20th Century trash dump; a paved road segment and two stone pillars from the original Rim of the World Highway; and a biofacial granite map possibly related to prehistoric inhabitants. As noted in the Initial Study (Appendix A), a Cultural Resource Investigation prepared in 2001 by The Chambers Group reported a lack of historical significance, integrity and research potential associated with the site.

Across Highway 189 from the project site is Pinecrest Christian Conference Center (Pinecrest). This facility includes accommodations for close to 400 people, chapels, an amphitheater and recreation facilities. Like the proposed project, Pinecrest is owned by the Assemblies of God; however the management and operation of the two facilities would remain entirely separate. Adjacent to the project on the south and east are portions of the San Bernardino National Forest (SBNF). Predominantly undeveloped, this area of the SBNF includes the Baylis Park Picnic Area located on the south side of Highway 18 approximately one-tenth of a mile from the project site and Strawberry Peak, located adjacent and to the east side of the project site. The Baylis Park Picnic Area includes tables, barbeques and restrooms. Strawberry Peak features radio antennae and a fire lookout tower with interpretive and visitor information. Approximately one-half mile to the east of the project site is the residential community of Rim Forest including some commercial and public uses along Highway 18.

Within a quarter-mile to the west of the project site along Highway 18 there are approximately a dozen cabins. Further west are the residential communities that border Lake Gregory including Arrowhead Highlands, Crestline and Valley of the Moon. North of the project site is the community of Twin Peaks, including the neighborhood of Strawberry Flat which has residences within 1,000 feet of the project site. At a community meeting on June 26, 2002, residents of Strawberry Flat who live in close proximity to Pinecrest and to the project site expressed concern regarding the proposed project and noise currently generated from Pinecrest. Figure 17 on page 144 shows existing land uses in the area of the proposed project.

b. Relevant Plans and Policies

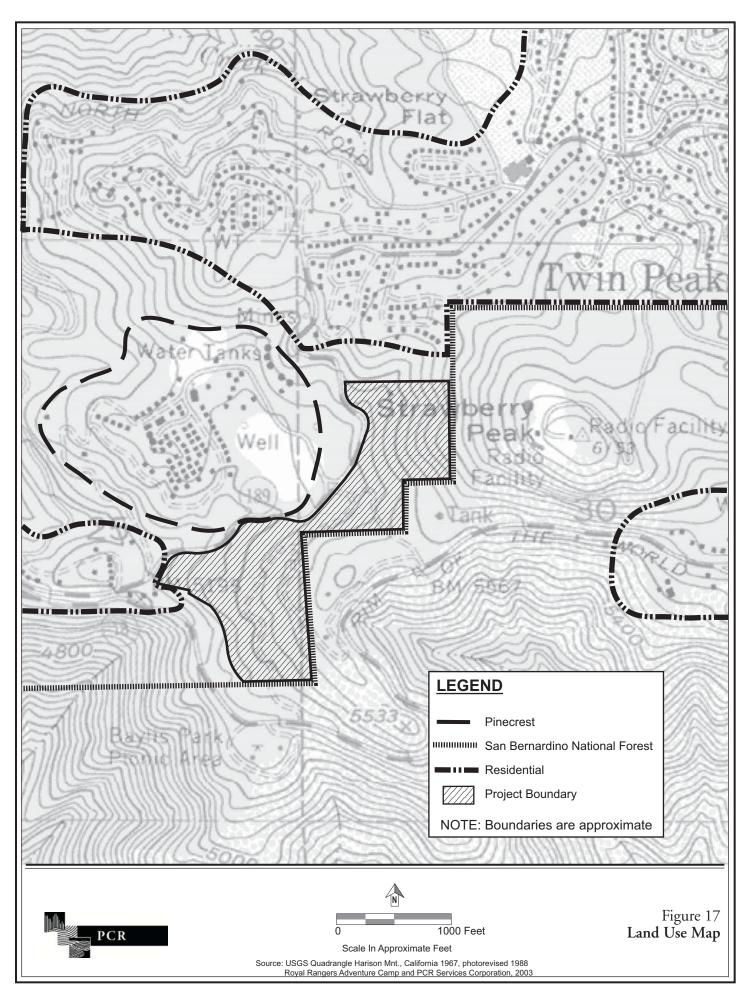
The project site is located in an unincorporated area of the County of San Bernardino and on private land within the boundaries of the San Bernardino National Forest. As such, land use plans and policies relevant to the site include the County of San Bernardino General Plan, the County of San Bernardino Development Code, the San Bernardino Association of Governments Congestion Management Plan, and the San Bernardino National Forest Land and Resource Management Plan, the Southern California Association of Governments (SCAG) Regional Comprehensive Plan and Guide, and the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan.

(1) County of San Bernardino General Plan

The County of San Bernardino General Plan (General Plan) is the primary policy document for the unincorporated area of San Bernardino County. The General Plan contains goals, policies, and implementing actions relative to various issues identified in individual topical elements of the plan.

The Land Use/Growth Management Element

The Land Use/Growth Management Element sets forth land use designations and policies that guide the physical development of privately owned land in the unincorporated portions of the County. The majority of the goals and policies contained in the General Plan's Land Use/Growth Management Element relate to urban communities and the arrangement and mix of residential, commercial and industrial land uses. The following three goals of the Land Use Element are applicable to the proposed project:



- D-47 Provide a compatible and harmonious arrangement of land uses in the rural areas and encourage the conservation of natural and cultural resources for the benefit of residents and visitors.
- D-49 Determine what the land is best suited for, match man's activities to the land's natural suitability, and minimize conflict with the natural environment.
- D-50 Support measures to preserve the soils essential to agriculture and encourage the protection and preservation of Open Space for recreation uses.

The General Plan's Land Use/Growth Management Element designates the proposed project site as Planned Development (PD/RS-14M). Land to the north, west and east also are designated as PD/RS-14M while land to the south is designated as Resource Conservation. The stated purposes of the Planned Development (PD) designation are:

- to allow a combination of uses including residential, commercial, industrial, agricultural, open space and recreation uses that maximizes the utilization of natural and man-made resources;
- to identify areas suitable for larger scale and cluster type developments; and
- to allow joint planning efforts among land owners and jurisdictions.

Development standards associated with the PD designation include a minimum parcel size of 40 acres, maximum building coverage of 70 percent, maximum building height of 50 feet, and a maximum floor area ratio of 1.20. The RS-14M designation permits a density of one dwelling unit per 14,000 square feet. This would allow for a theoretical density of 155 dwelling units on the site. Other requirements and site constraints would make a practical dwelling unit density much lower. Although not necessarily reflective of site buildout potential, in 1992 the County reviewed a proposed Planned Residential Development that featured 60 residential lots on the project site. This proposal was abandoned due to changed economic circumstances.

For each land use designation, the Land Use Element specifies Maximum Population Density Averages (MPDA), with an assumption of 2.75 persons per dwelling unit in unincorporated portions of the County. For the PD designation, the MPDA is 24,560 persons per square mile. Based on the persons per dwelling unit assumption utilized in the Land Use Element, the potential population of the project site under the theoretical density of 155 dwelling units would be 426 persons; the population of the proposal reviewed in 1992 would have been 165.

Open Space Element

The Open Space Element of the General Plan identifies the Strawberry Creek wildlife corridor as crossing through the eastern portion of the project site on a north-south alignment. The Open Space Element states that Wildlife Corridor Zones are general indications of areas within which major wildlife corridors should be provided based on future studies. The following policy of the Open Space Element relates to this designation:

OR-15 Because the County desires to protect and preserve natural habitat, areas shown on the Resources Overlay as "Policy Zones" and "Wildlife Corridors" shall be targeted for ministerial and discretionary actions, including purchase of some lands, in support of preserving the natural features and habitat present.

This designation is further explored in section 3.C of this Draft EIR.

The Open Space Element also designates Highway 18 as a scenic route. The Open Space Element defines a scenic corridor as extending 200 feet on either side of a designated route. The project site is within 150 feet to 350 feet of Highway 18. Therefore, the following Scenic Resource related goals and policies of the Open Space Element may be applicable to the project:

- C-56 Restrict development along scenic corridors.
- C-57 Provide for visual enhancement of existing and new development through landscaping.
- OR-51 Because the provision of scenic areas, trails, and scenic highways is an integral part of the planning process, the County shall require the following:
 - Review of proposed development along scenic highways and trails shown on the Resource Overlay Maps to ensure preservation of scenic values for the traveling public and those seeking a recreational driving experience.
 - Require removal of non-conforming signs per County sign ordinance standards for new uses or substantial revisions to existing uses.
 - Along Scenic Routes, prohibit primary free standing signs greater than 18 square feet. This shall include all primary free standing signs oriented to the scenic right-of-way.

- Require provision of vantage or vista points along scenic routes by new development proposed adjacent to those routes for scenic and interpretive displays and roadside rests.
- Encourage undergrounding of all utility facilities for all projects requiring discretionary or ministerial action.
- Review site planning, including architectural design, to prevent obstruction of scenic views and to blend with the surrounding landscape.
- Require compliance with grading and vegetation removal standards as set forth in the Scenic Routes Overlay District.
- OR-57 Because the preservation of scenic qualities can, in many cases, be achieved only through the preservation of existing landform and natural features, the County shall require the following:
 - Require that natural landform and ridgelines be preserved by using the following measures:
 - i. Keeping cuts and fills to an absolute minimum during the development of the area.
 - ii. Requiring the grading contours that do occur to blend with the natural contours on site or to look like contours that would naturally occur.
 - iii. Encouraging the use of custom foundations in order to minimize disruption of the natural landform.

Mountain Region

The County of San Bernardino General Plan includes sections devoted to regional and subregional planning issues. The project site is within the Mountain Regional Planning Area, partially within the Crest Forest Community Planning Area and partially within the Lake Arrowhead Community Planning Area. The general goals of the Mountain Regional Section are to:

- Help protect the alpine character and environment;
- Protect the forest watersheds; and,
- Minimize soil erosion through control of flooding and sedimentation.

The Mountain Regional Section specifies sets of policies and actions to achieve its overall goals. Many of the policies of the Mountain Regional Section of the General Plan deal with the appropriate placement and design of residential, commercial and industrial uses. Institutional and recreational uses, such as the proposed project are not specifically addressed. However a number of these policies deal with general development of man made resources and the management of natural resources. Policies applicable to the proposed project include:

- Protect rights-of-way and limit access by carefully locating driveways, intersecting streets, providing adequate turning movements, storage areas, and applying current state-of-the-art traffic engineering to fully utilize the limited vehicular design capacity of mountain roads;
- Give special attention to an adequate system of roads which would provide quick access in the event of fire emergencies;
- The density and character of development shall not detract from the beauty, character and quality of the residential alpine environment; and
- Through the development review process, permit new development only when new public services required to safely provide for the development are existing or assured.

Additionally, the following policy of the Lake Arrowhead Planning Area, which includes the eastern portion of the project site, is applicable:

• Ensure that commercial recreation and tourist facilities be located, designed and controlled to protect the residential-recreation character of the area.

(2) County of San Bernardino Development Code

The County of San Bernardino Development Code (the Code) establishes procedures and standards for implementing the development policies of the County. The Code defers to the General Plan for the location of land use Districts; therefore the project site is within the Planned Development (PD) District. As defined by the Code, the Planned Development Districts permits single dwelling units, small-scale (6 or fewer clients) social care facilities, and agricultural uses. Commercial and industrial uses of less than 10,000 square feet are permitted by Conditional Use Permit. Multi-unit residential uses and commercial and industrial uses larger than 10,000 square feet are permitted subject to Planned Development Review.

The Code specifies development standards for the PD district as follows:

- Maximum structure height of 50 feet;
- Minimum lot size of 40 acres;
- Maximum lot coverage of 70%;
- Maximum lot dimensions (width to depth ratio) of 1:4;
- Minimum lot dimensions (width/depth in ft) of 60/100;
- Front yard setback of 15 ft.;
- Side and rear yard setbacks of 10 ft.;
- Maximum floor area ration (FAR) of 1.20; and
- Minimum District size of 40 acres.

However, different design standards may be established through the review process. Furthermore, the Code specifies design standards for residential development in the subregions of the Mountain Region that replace the standards generally applicable to the land use district. For the Crest Forest Planning Area and the Lake Arrowhead Planning Area, these standards which apply to residential development are:

- Maximum structure height of 35 feet;
- Minimum lot size of 7,200 sq.ft.;
- Maximum lot coverage of 40%;
- Maximum lot dimensions (width to depth ratio) of 1:4;
- Minimum lot dimensions (width/depth in ft) of 60/100 on a interior lot and 70/100 on a corner lot with a minimum width of 150 feet for all lots of more than 1 acre;
- Front yard setback of 15 ft.;
- Rear yard setback of 15 ft.;
- Side yard setbacks of 20% of the lot width up to 15 ft;
- Street side setbacks of 15 ft; and

• All structure to maintain a 10 foot separation with 30 foot separation required in areas without adequate fire flow or average slope of over 15%.

The Code permits organizational camps and conference centers, such as the proposed project, in any land use district by means of the Conditional Use Permit process. The Code states that Conditional Use Permits are intended to provide an opportunity to review the location and manner of development of land uses prior to their implementation. Prior to approving a Conditional Use Permit, the approving agency must find that:

- The site is adequate in size and shape to accommodate the proposed use including all features of that use;
- The site has adequate access;
- The use will not have a substantial adverse effect on abutting property, including that it will not generate excessive noise, vibration, traffic or other disturbance or with the present or future ability to use solar energy systems;
- The proposed use is consistent with the goals, policies, standards and maps of the General Plan and any applicable plan;
- The lawful conditions state in the approval are deemed necessary to protect the public health and general welfare; and
- The design of the site has considered the potential for the use of solar energy systems and passive or natural heating and cooling opportunities.

(3) SCAG Regional Comprehensive Plan and Guide

The Proposed project site is located within the planning area of the Southern California Association of Governments (SCAG). SCAG is a Joint Powers Agency with numerous roles and responsibilities relative to regional issues that extend beyond jurisdictional boundaries. SCAG has published the Regional Comprehensive Plan and Guide (RCPG), which provides a framework for decision-making with respect to the growth and changes that can be anticipated by the year 2015 and beyond. The RCPG proposes a voluntary strategy for local governments to use in assisting them with addressing issues related to future growth and in assessing the potential impacts of proposed development proposed projects within the regional context. The RCPG includes adopted policies related to land use which could ultimately lead to the development of an urban form that would minimize development costs, protect natural resources, and enhance the quality of life in the region.

Most of the RCPG land use policies refer to the proper location of development in relationship to existing infrastructure, urban centers and mixed-use clusters. Due to the non-urban setting of the project, many of these policies do not apply. Other RCPG policies that do related to the proposed project include:

- SCAG shall discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.
- SCAG shall encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage and to develop emergency response and recovery plans.

(4) SCAQMD Air Quality Management Plan

The Proposed project site is located within the South Coast Air Basin (the Basin), making it subject to policies set forth by the South Coast Air Quality Management District (SCAQMD). The SCAQMD, in conjunction with SCAG, is responsible for establishing and implementing air pollution control programs throughout the Basin. The SCAQMD's Air Quality Management Plan (AQMP) presents strategies for achieving the air quality planning goals set forth in the Federal and California Clean Air Acts (CCAA), including a comprehensive list of pollution control measures aimed at reducing emissions. Specifically, the AQMP proposes a comprehensive list of pollution control measures aimed at reducing emissions and achieving ambient air quality standards. The AQMP is based in part on projections originating with the San Bernardino County General Plan. Consistency with the SCAQMD AQMD is evaluated in Section 3.B., Air Quality, of this Draft EIR.

(5) San Bernardino National Forest Land and Resource Management Plan

The project site is within the San Bernardino National Forest. However, the site is private land and is not subject to the San Bernardino National Forest Land and Resource Management Plan. Much of the land immediately adjacent to the project site on the south and east is administered by the San Bernardino National Forest and is subject to the Land and Resource Management Plan. These lands are part of the Western unit of the Back Country Management Area administered by the Arrowhead Ranger District. The land that is north of Highway 18 and southeast of the project site including Strawberry Peak is designated as Recreation on the San Bernardino National Forest Management Plan, while the land south of Highway 18 is designated as Watershed. These designations represent Management Emphasis Zones (MEZ) that defined the form of treatments or activities applied for these lands. The Recreation MEZ defines areas within which recreation resources will be optimized in conjunction with managed resource protection. The Watershed MEZ defines areas in which

forest management will maintain and enhance watershed integrity to protect onsite and downstream values as well as sustain land productivity.

2. THRESHOLDS OF SIGNIFICANCE

The Initial Study prepared for the project concluded that the potentially significant land use conflicts, cumulative impacts, and consistency with the goals and policies of the General Plan should be evaluated in this EIR. Therefore, based in part on the criteria established in CEQA Guidelines Appendix G, the proposed project would cause a significant impact if:

- It would conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- It would create an incompatible land use relationship with established uses in the area.

The first listed threshold for determining significance emphasizes conflicts with plans adopted for the purposes of avoiding or mitigating an environmental effect, recognizing that an inconsistency with a plan, policy, or regulation does not necessarily equate to a significant impact on the environment. In itself, an inconsistency between a project and a plan is a legal determination rather than a physical impact on the environment.⁵⁷ Where a plan is adopted for the purpose of avoiding or mitigating a physical impact on the environment, an inconsistency may be evidence that the project may result in a significant effect on the environment.⁵⁸

3. ENVIRONMENTAL IMPACTS

a. Methodology

This analysis focuses on the consistency of the proposed project with adopted plans, policies and ordinances and the compatibility of the proposed project with surrounding land uses. The determination of consistency with applicable land use policies and ordinances is based upon a review of the previously described planning documents that regulate land use or guide land use

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Practice Under the California Environmental Quality Act, Continuing Education of the Bar, Stephen L. Kostka, Michael H. Zischke, Chapter 12, Section 12.36, p. 497.4 (January 2002)

⁵⁸ Ibid.

decisions pertaining to the proposed project. The determination of land use compatibility is based upon an assessment of the relationships between the proposed land use and surrounding land uses.

b. Project Design Features

As further described in Chapter 2.0, Project Description, the proposed project would create a campground and conference center for the Royal Rangers, a Christian youth organization for boys between the ages of five and 18. Although the maximum capacity of the Proposed project would be 1,048 persons, the camp sessions would range from 100 – 900 persons, with the majority of the camp sessions featuring 250 or less.

The Proposed project calls for the development of various structures and facilities, including:

- a central multi-purpose ("Fort") building containing 248-bed dormitory, a gymnasium, dining room, meeting rooms and a courtyard surrounded by a 28-foot wall featuring four 38-foot towers;
- 340 tent sites arranged around approximately 50 fire circles;
- two outdoor amphitheatres, one with seating for 300 and the other with seating for 1,000 persons;
- an outdoor chapel with amphitheatre style seating for 75 people;
- a 25-yard archery range;
- a 50-yard gun range;
- swimming pools including associated concession, sitting/eating area and restroom facilities:
- recreational areas including 3 volleyball and 2 basketball courts, a grass hockey field, a mountain bike course, two rope apparatus courses, as well as nature trails; and
- ancillary structures including camp office and infirmary, staff cabins including the Director's and Assistant Director's cabins, guard towers at the main entrance and at the emergency access, bathroom facilities, maintenance workshop, bike shop, and storage sheds.

Vehicular access to the proposed project would be via a gated entry on Highway 189. There would be emergency access provided at another point along Highway 189 and at three points along the site's southern boundary from fire roads through U.S. Forest Service (USFS) property to Highway 18. These emergency access points would be gated and locked. Internal circulation would be provided via paved roads that loop around the main uses on the site. These roads would be 20 feet wide for one-way roads or roads on steep terrain and 26 feet for main driveways with two-way access. The Proposed project would provide approximately 491 parking spaces with overflow parking for large events provided in designated unpaved areas.

Proposed structures would be setback 15 feet from the property line along Highway 189. A four-foot high split rail fence would be installed along the entire perimeter of the site. Additionally, a permanent 100-foot wide 'fuel modification zone' would be maintained around the perimeter of the site to provide a firebreak to deter the spread of a potential forest fire. Plant materials that accumulate within this zone would be cleared regularly in accordance with the requirements of the Crest Forest Fire Protection District. This feature is discussed further in Section 3.E., Hazards and Hazardous Materials, of this EIR.

The proposed project would result in the disturbance of approximately 33 acres (66 percent) of the project site with the remaining 17 acres (34 percent) of the site left as open space, available for hiking and other passive recreational use. It is estimated that development of the project would result in the removal of 1,364 (20 percent) of the 6,750 existing trees on the site that are six inches in diameter or larger.

c. Analysis of Land Use Impacts

G-1. Land Use Compatibility. The project would have significant unavoidable impacts associated with aesthetics and noise. These effects represent potential land use conflicts between the project and surrounding uses. This is considered *a Potentially Significant Impact*.

The proposed project would introduce a new land use within the surroundings. As identified earlier, the surrounding land uses include a conference center/camp (Pinecrest), the San Bernardino National Forest (SBNF), cabins and residential communities. The forested landscape and uneven topography of the area limit the interface between the project site and surrounding land uses. Nonetheless, there may be sources of conflict between the proposed land uses and existing land uses in the surrounding area.

On the opposite side of Highway 189, the Pinecrest conference center is a land use similar to the proposed project. As a result, these two uses are expected to be compatible, though concurrent usage could generate cumulative impacts, as discussed below.

Currently there is a similarity in land use between the site and the adjacent SBNF lands to the south and east. With implementation of the project, there would be a new land use interface characterized by changes in the visual and noise environment of the project site as experienced from the SBNF. As identified in Section 3.A., Aesthetics, of this Draft EIR, the project would have a significant aesthetic impact on views from the hiking trails within the SBNF near the northeastern portion of the project site. As identified in Section 3.H., Noise, of this EIR, the project would also generate significant noise impacts. These significant impacts, which cannot be fully mitigated, represent a potential land use conflict between the project and the adjacent SBNF.

The surrounding area also includes cabins with a quarter mile to the west of the site and residential communities within a half-mile of the site to the north, east and west. These uses would not have a direct interface with the project. Nonetheless, due to the anticipated changes in noise conditions associated with the project, there would be a land use conflict between the project and nearby residential uses along the southwest boundary of the site and to the northeast in the Strawberry Flats Area. As identified in Section 3.H., Noise, of this EIR, the project would generate significant noise impacts which cannot be mitigated. These impacts experienced by nearby residents represent a land use conflict.

G-2. Relevant Plans and Policies. The project would conflict with a proposed wildlife corridor and relevant policies designed to protect the character of the area and provide a harmonious arrangement of land uses. Although the conflict with the wildlife corridor designation is considered less than significant, the project effects on the character of the area and land use compatibility are considered *a Potentially Significant Impact*.

The relationship of the project to the relevant plans and policies that were identified above is presented in Table 20 on page 156. While the project would be consistent with most of the applicable plans and policies, there are some areas of conflict. Specifically, the significant unavoidable impacts to aesthetics and noise that would result from the project represent a conflict with the policy found in the Mountain Region Section of the County of San Bernardino General Plan that addresses the beauty and character of the residential alpine environment. In addition, the project would conflict with the Conditional Use Permit criteria, as contained in the County of San Bernardino Development Code, that specifies that the proposed use will not have a substantial adverse effect on abutting property. These conflicts are potentially significant impacts.

The project also appears to be in conflict with the policies associated with the Strawberry Creek wildlife corridor delineated on the Resources Overlay of the County of San Bernardino General Plan Open Space Element. However, an inconsistency with a plan, policy or regulation does not necessarily equate to a significant impact on the environment. As described in Section

Table 20

RELATIONSHIP OF PROJECT TO RELEVANT PLANS AND POLICIES

Relevant Goal or Policy	Relationship of Project
County of S	County of San Bernardino General Plan
Land Use/Growth Management Element D-47: Provide a compatible and harmonious arrangement of land uses in the rural areas and encourage the conservation of natural and cultural resources for the benefit of residents and visitors.	As a campground and conference center the proposed project is a use compatible with the rural mountain area. The proposed project objectives include providing a setting for a mountain camping experience and, the development proposal incorporates a museum and nature center within the fort building and also preserves approximately 34 percent of the site as open space. Given that the proposed use is compatible with mountain area development, and the project supports the conservation of natural and cultural resources, no conflict with this policy is identified.
D-49: Determine what the land is best suited for, match man's activities to the land's natural suitability, and minimize conflict with the natural environment.	The project has been designed to minimize conflict with the natural environment by using the natural topography and minimizing grading to the extent feasible while also preserving approximately 34 percent of the site as open space. Furthermore, the project would mitigate impacts on the southern rubber boa and jurisdictional waters and would seek to preserve trees throughout the site in areas where development is not proposed. Accordingly, as the campground and conference center project is viewed as suitable development type for the site, and the project's design and mitigation measures minimize conflict with the natural environment, no conflict with this policy is identified.
 D-50: Support measures to preserve the soils essential to agriculture and encourage the protection and preservation of Open Space for recreation uses. Planned Development (PD) designation to allow a combination of uses including residential, commercial, industrial, agricultural, open space and recreation uses that maximizes the utilization of natural and man-made resources; to identify areas suitable for larger scale and cluster type developments; and to allow joint planning efforts among land owners and jurisdictions. 	The project does not include soils essential to agriculture and incorporates open space for recreation and camping related use. As such, the project would not conflict with this policy. The proposed use is not identified as a use within the Planned Development designation. However, the proposed use incorporates open space and recreational uses and is a use that may be permitted through the Conditional Use Permit process. As such, the project would not conflict with this policy.
PD Development standards • minimum parcel size of 40 acres • maximum building coverage of 70% • maximum building height of 50 feet • maximum floor area ratio of 1.20	The project would meet the development standards of the PD land use designation: the lot is over 50 acres in size; the tallest structure would be 50 feet above grade; building coverage would be well under 70 percent, and the proposed FAR would be less than 1:1.2. As such, the project would not conflict with these development standards.

Table 20 (Continued)

RELATIONSHIP OF PROJECT TO RELEVANT PLANS AND POLICIES

Relevant Goal or Policy	Relationship of Project
Designated density of one dwelling unit per 14,000 square feet.	The maximum occupancy of the project is 1,048 persons based on 248 beds in the Fort Building, and 340 tent sites accommodating approximately 800 persons. While this maximum occupancy would appear to exceed the equivalent density that is set forth for residential uses, the campground would have a limited year round on-site population of 14 staff, with camp sessions occurring about 108 days in a given year. Additionally, the majority of the camp sessions would involve an on-site population of 250 or less persons, which is well below the equivalent residential population of the site if developed at the permitted density. Therefore, the overall density of the project on an average annual basis would not be greater than the permitted build-out of the site with residential uses. As such, the project would not conflict with this standard.
Open Space Element OR-15: Because the County desires to protect and preserve natural habitat, areas shown on the Resources Overlay as "Policy Zones" and "Wildlife Corridors" shall be targeted for ministerial and discretionary actions, including purchase of some lands, in support of preserving the natural features and habitat present.	The project would preserve as open space much of the northeaster portion of the site, which is the area designated on the Resources Overlay as part of the Strawberry Creek wildlife corridor. Although a portion of the project site is designated for as a potential wildlife corridor, more focused study undertaken for this EIR indicates that the site is a minor component of the larger Strawberry Creek wildlife corridor and does not concentrate wildlife movement from the surrounding area. Therefore, impacts associated with development and use of the site are not anticipated to significantly affect regional wildlife movement. Therefore, although development of the project site appears to be in conflict with its identification as a wildlife corridor, this conflict does not represent a significant impact on the environment. See Section 3.C., Biological Resources, of this EIR for further discussion of this issue.
C-56: Restrict development along scenic corridors	Highway 18 is a designated scenic route. Although the project site is located in proximity to Highway 18, only a small portion of the fuel modification zone along the western edge of the project site is within the scenic corridor. Due to intervening topography and forested land, the project would not have a significant impact on the visual character of Highway 18 and would not conflict with this policy. As such, other policies associated with scenic routes are not applicable to the project.

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Table 20 (Continued)

RELATIONSHIP OF PROJECT TO RELEVANT PLANS AND POLICIES

Relevant Goal or Policy	Relationship of Project
Mountain Region • Help protect the alpine character and environment;	The proposed project objectives include providing a setting for a mountain camping experience and, the development proposal preserves approximately 34 percent of the site as open space. The design of buildings and structures and efforts to reduce grading and tree loss are also intended to preserve the character of the mountain environment. Although development of the project would have impacts on the character of the mountain environment, particularly due to unavoidable significant impacts to aesthetics and views along Highway 189 and noise impacts associated with concurrent site activities and use of the Pinecrest amphitheatre, the project does preserve much of the alpine character of the site to a degree appropriate for a site designated for Planned Development. As such, the project is not in conflict with this policy.
 Protect the forest watersheds; Minimize soil erosion through control of flooding and sedimentation; 	The project would comply with RWQCB requirements and State NPDES permit requirements. As such, the project is not expected to impact the forest watershed or result in substantial erosion. The project would not conflict with these policies.
Protect rights-of-way and limit access by carefully locating driveways, intersecting streets, providing adequate turning movements, storage areas, and applying current state-of-the-art traffic engineering to fully utilize the limited vehicular design capacity of mountain roads;	The project entrance has been designed to provide adequate turning movements and the traffic study conducted for the project includes mitigation measures developed with input from County staff that address driveway location, turning movements and other engineering features that will ensure safe and adequate vehicular circulation. As such, the project would not conflict with this policy.
Give special attention to an adequate system of roads which would provide quick access in the event of fire emergencies;	The project includes three emergency access points that connect to existing fire roads through the San Bernardino National Forest Lands to the southeast of the site. Furthermore, the project is required to comply with the Fire Safety Overlay Conditions of the San Bernardino Development Code, and prior to any construction occurring on the site, the applicant is required to contact the Fire District for verification of current fire protection development requirements, including provisions for emergency access and roadway design. As such, project compliance with fire safety overlay conditions and Fire District plan review would support consistency with this policy.

Table 20 (Continued)

RELATIONSHIP OF PROJECT TO RELEVANT PLANS AND POLICIES

Relevant Goal or Policy	Relationship of Project
• The density and character of development shall not detract from the beauty, character and quality of the residential alpine environment; and	The project is expected to have aesthetic and view impacts that would change the visual character of the site and surrounding environment. While mitigation is proposed, impacts on aesthetics and views along Highway 18 would remain significant and unavoidable. As such, the project would conflict with this policy.
• Through the development review process, permit new development only when new public services required to safely provide for the development are existing or assured.	The applicant has taken steps to ensure that public services will be adequate to safely provide for the development. The provision of public services will be further assured through the continuing development review process.
§83.030120 Conditional Use Permit Review (d) Findings (3) The use will not have a substantial adverse effect on abutting property, including that it will not generate excessive noise, vibration, traffic or other disturbance or with the present or future ability to use solar energy systems;	The Project would have unavoidable significant noise impacts. As such, the project would conflict with this criterion.
Other Re	Other Regional Plans and Policies
 SCAG Regional Plan and Guide SCAG shall discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards. 	The project incorporates a number of design features, which, combined with the mitigation measures included in this EIR, collectively address geologic/seismic hazards, fire hazards, and flood risk. These provisions support consistency with this policy.
SCAG shall encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage and to develop emergency response and recovery plans.	The project includes measures to mitigate impacts on noise, biological resources and seismic/geologic hazards as further described in Section 3.H., Noise, Section 3.C., Biological Resources, and Section 3.D., Geology and Soils. The project design and standard conditions of approval discussed in Section 3.E., Hazards and Hazardous Materials, ensure adequate emergency response. In light of these provisions, no conflict with this policy has been identified.
SCAOMD Air Quality Management Plan	Since the project is consistent with the density permitted by the land use designation of the San Bernardino County Plan, it is considered to be consistent with the region's AQMP. See Section 3.B., Air Quality, for further discussion of this issue.

3.C., Biological Resources, of this DEIR, the use of the site as a wildlife corridor is considered unlikely. Therefore, though there is an apparent conflict between the project and the policies of the General Plan relative to wildlife corridors, this conflict does not represent a significant impact on the environment.

4. **CUMULATIVE IMPACTS**

The potential for cumulative impacts occurs when the impacts of the project and the impacts of related projects together yield impacts that are greater than the impacts separately. No related past, present or reasonably foreseeable future projects were identified in the immediate surrounding area, although more remote related projects and levels of growth forecasted for the region have been incorporated into the analysis in this Draft EIR as appropriate.

As identified in Section 3.H., Noise, of this EIR, concurrent operations of Pinecrest and the project could result in cumulative impacts relative to noise.

It is reasonable to assume that future projects approved in the surrounding area will be found, as part of the approval process, to be in compliance with local and regional planning goals and policies. If a related project was found to be in conflict with applicable land use plans, policies and regulations, it is reasonable to assume that approval would involve findings that the project features did not have adverse land use impacts or that the project incorporate mitigation measures or changes necessary to reduce potential land use impacts to less-than-significant levels.

5. MITIGATION MEASURES

The significant impacts on land use identified above are associated with significant impacts resulting from aesthetics, noise, and traffic as identified in Section 3.A., Aesthetics, Section 3.H., Noise, and Section 3.I., Transportation and Circulation, of this Draft EIR. Mitigation measures that address each of these impact areas are presented in their respective sections.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

As a result of the mitigation measures referred to above, land use impacts related to views and noise level would remains significant and unavoidable.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES H. NOISE

This section is based in part on information provided in a Focused Noise Study prepared by Synectecology, October 25, 2003 and an Ambient Noise Measurement Report prepared by PCR Services Corporation, February 24, 2003. These documents are provided in Appendix F to this Draft EIR. The following analysis defines the existing noise environment within the project area and estimates future noise levels at surrounding land uses resulting from project construction and operation. Potential short-term and long-term noise levels associated with the proposed project are assessed with respect to the County of San Bernardino's Noise Element and County Code—Division 7 "General Design Standards," Chapter 9 "Performance Standards" (Performance Standards), as well as other industry recognized noise criteria.

1. ENVIRONMENTAL SETTING

a. Noise Characteristics and Sound Measurement

Noise is usually defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying (unwanted sound). Although sound can be easily measured, the perceptibility of sound is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness." Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB).

The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human, frequency-dependent response, the A-weighted filter system is used to adjust measured sound levels. The A-weighted sound level is expressed in "dBA." Typical A-weighted sound levels measured for various sources and people's responses to these sound levels are provided in Figure 18 on page 162. A more detailed discussion of the characteristics of sound is provided in the Focused Noise Study, included as Appendix F to this Draft EIR.

Time variation in noise exposure is typically expressed in terms of the average energy over time (L_{eq}), or alternatively, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of

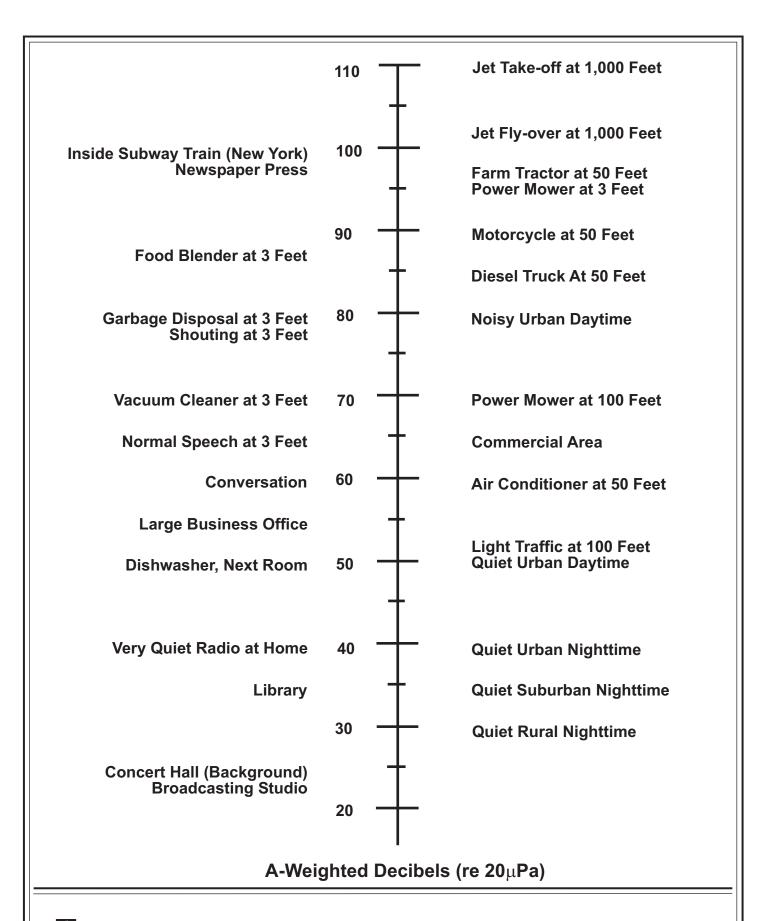




Figure 18 A-Weighted Sound Levels

the level that is exceeded 30 minutes in an hour. Similarly, the L_{02} , L_{08} , and L_{25} represent the noise levels that are exceeded 2, 8 and 25 percent of the time, respectively, or one, five, and 15 minutes per one hour period, respectively. In addition, L_{max} represents the maximum root-mean – square noise levels typically obtained over a period of 1 second. These "L" values are used to evaluate the compliance of stationary noise sources with County of San Bernardino Performance Standards, as discussed below.

Although the A-weighted scale accounts for the range of people's response, and therefore, is commonly used to quantify individual event or general community sound levels, the degree of annoyance or other response effects also depends on several other perceptibility factors. These factors include:

- Ambient (background) sound level;
- Magnitude of sound event with respect to the background noise level;
- Duration of the sound event;
- Number of event occurrences and their repetitiveness; and
- Time of day that the event occurs.

Several methods have been devised to relate noise exposure over time to community response. A commonly used noise metric for this type of study is the Community Noise Equivalent Level (CNEL). The CNEL, originally developed for use with California Airport Noise Regulation, adds a 5 dBA penalty to noise occurring during evening hours from 7:00 P.M. to 10:00 P.M., and a 10 dBA penalty to sounds occurring between the hours of 10:00 P.M. to 7:00 A.M. to account for the increased sensitivity to noise events that occur during the quiet late evening and nighttime periods. Thus, the CNEL noise metric provides a 24-hour average of A-weighted noise levels at a particular location, with an evening and a nighttime adjustment, which reflects increased sensitivity to noise during these times of the day.

b. Ground-borne Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration velocity is most often described in terms of peak particle velocity (PPV) for purposes of ground-borne vibration analysis. Typically, ground-borne vibrations generated by man-made activities attenuate rapidly with distance from the source of the vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source.

Both construction and operation of development projects can generate ground-borne vibration. In general, demolition of structures during construction generates the highest vibrations. Construction equipment such as vibratory compactors or rollers, heavy trucks, and pavement breakers can generate perceptible vibration during construction activities at distances of 10 to 25 feet. Pile drivers can generate perceptible vibration at up to 100 feet. Since the project will not require the use of pile drivers and no substantial operational vibration sources are proposed as part of the project, the project would have a negligible effect on existing levels of ground-borne vibration and is therefore not discussed further in this EIR.

c. Regulatory Framework

Many government agencies have established noise standards and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise and vibration. Local regulation of noise ordinarily involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans, and noise ordinances set forth specific standards and procedures for addressing particular noise and vibration sources and activities. The County of San Bernardino has adopted a number of policies, which are in part, based on federal and state regulations that are directed at controlling or mitigating environmental noise effects. County policies and standards that are relevant for project development and operation are discussed below.

(1) San Bernardino County General Plan Noise Element

The overall purpose of a general plan is to protect citizens from the harmful and annoying effects of exposure to excessive noise, and to protect the represented economic base by preventing the encroachment of incompatible land uses within areas affected by existing noise-producing uses. The general goals of the San Bernardino County Noise Element are to:

- B-5: Develop and adopt specific policies and an effective implementation program to abate and avoid excessive noise exposures in the County by requiring that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses.
- B-6: Provide sufficient noise exposure information so that existing and potential noise impacts may be effectively addressed in the land use planning and project review processes.
- B-7: Protect areas within the County where the present noise environment is within acceptable limits.

The San Bernardino County General Plan presents interior and exterior noise level standards for both mobile and locally regulated sources. These standards are presented in Table 21 on page 166 and Table 22 on page 167, respectively.

Areas within San Bernardino County are designated as "noise-impacted" if exposed to existing or projected future noise levels from mobile or stationary sources exceeding the standards presented in Table 21 and Table 22. New development of residential or other noise-sensitive land uses is not permitted in noise-impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise to levels at or below these standards.

(2) San Bernardino County General Design Standards

The County recognizes that some forms of noise are required for urban development and maintenance and are difficult to control. Section 87.0905 (e), "Exempt Noises" of the Performance Standards provides for these exemptions. Those applicable to the project include:

- Motor vehicles not under the control of the industrial use (i.e., those preempted by State or federal law),
- Emergency equipment, vehicles, and devices, and
- Temporary construction, repair, or demolition activities between 7:00 A.M. and 7:00 P.M., except Sundays and Federal holidays.

d. Existing Noise Conditions

(1) Noise-Sensitive Receptors

Some land uses are more sensitive to intrusive noise than others due to the amount of noise exposure and the types of activities involved at the receptor location. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, nursing homes, and parks are generally more sensitive to noise than commercial and industrial land uses. The most proximate off-site noise sensitive receptors include three cabins located near the western project boundary. The nearest of these cabins is approximately 80 feet from the project boundary. The nearest single-family residences are located in Strawberry Flat approximately 750 feet from the northern boundary. In addition, the Pinecrest Christian Conference Center (Pinecrest) is located directly across Highway 189 to the north of the project site. All of these receptors are separated from the project site by expanses of forested land. The locations of noise sensitive receptors in relation to the project site are identified in Figure 19 on page 168.

Table 21

COUNTY OF SAN BERNARDINO INTERIOR/EXTERIOR
NOISE LEVEL STANDARDS – MOBILE NOISE SOURCES

Land Use	Land Use		CNEL) ^a , dB
Categories	Uses	$\mathbf{Interior^b}$	Exterior ^c
Residential	Single and multi-family, duplex, mobile homes	45	60 ^d
	Hotel, motel, transient lodging	45	$60^{\rm d}$
	Commercial retail, bank, restaurant	50	NA
Commercial	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	NA
Institutional/Public	Hospital, nursing home, school classroom, church, library	45	65
Open Space	Park	NA	65

 L_{dn} is the day-night average sound level; CNEL is the community noise equivalent level. The difference between L_{dn} and CNEL values is usually within 1dB.

Indoor environment, excluding bathrooms, kitchens, toilets, closets, and corridors.

Source: San Bernardino County General Plan.

Increased noise levels may also interfere with wildlife activities and functions. A designated wildlife corridor exists across the site along a north-south alignment as further discussed in Section 3.C., Biological Resources, of this Draft EIR.⁵⁹ The project site exists within the northwestern corner of the corridor and the western portion of the site occurs outside the corridor. In addition, approximately 17 acres primarily in the northeast portion of the project site are designated as open space and make up the majority of the project site that occurs within the Strawberry Creek corridor.

Outdoor environment, limited to private yard of single-family dwellings, park picnic areas, multi-family private patios or balconies, school playgrounds, mobile home parks, hotel and motel recreation areas, and hospital/office building patios.

An exterior noise level of up to 65 dB L_{dn} (or CNEL) will be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dB L_{dn} (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level will necessitate the use of air conditioning or mechanical ventilation.

⁵⁹ County of San Bernardino. 1991. A Plan of Open Space and Trails for the County of San Bernardino.

 $\label{eq:table 22}$ COUNTY OF SAN BERNARDINO EXTERIOR NOISE STANDARDS – STATIONARY SOURCES a

	7:00 a.m. – 10:00 p.m.		10:00 p.m. – 7:00 a.m.		
Affected Land Use (Receiving Noise)	$L_{eq} (dBA)^{b,c}$	L _{max} (dBA)	L _{eq} (dBA) b,c	L _{max} (dBA)	
Residential	55	75	45	65	
Professional Services	55	75	55	75	
Other Commercial	60	80	60	80	
Industrial	70	90	70	90	

^a Noise sources which are stationary and not pre-empted from local noise control. Pre-empted sources include vehicles operated on public roadways, railroad line operations and aircraft in flight.

Source: San Bernardino County General Plan and Performance Standards (8.07.09).

(2) Ambient Noise Levels

The noise environment in the project area is dominated by traffic noise from nearby roadways. The heaviest traveled roadway in the project area is Highway 189 located north of the project site. Secondary noise results from activities held at Pinecrest and occasional distant aircraft over-flights. Ambient noise levels in the project vicinity are typical of noise levels experienced within rural areas throughout the County of San Bernardino.

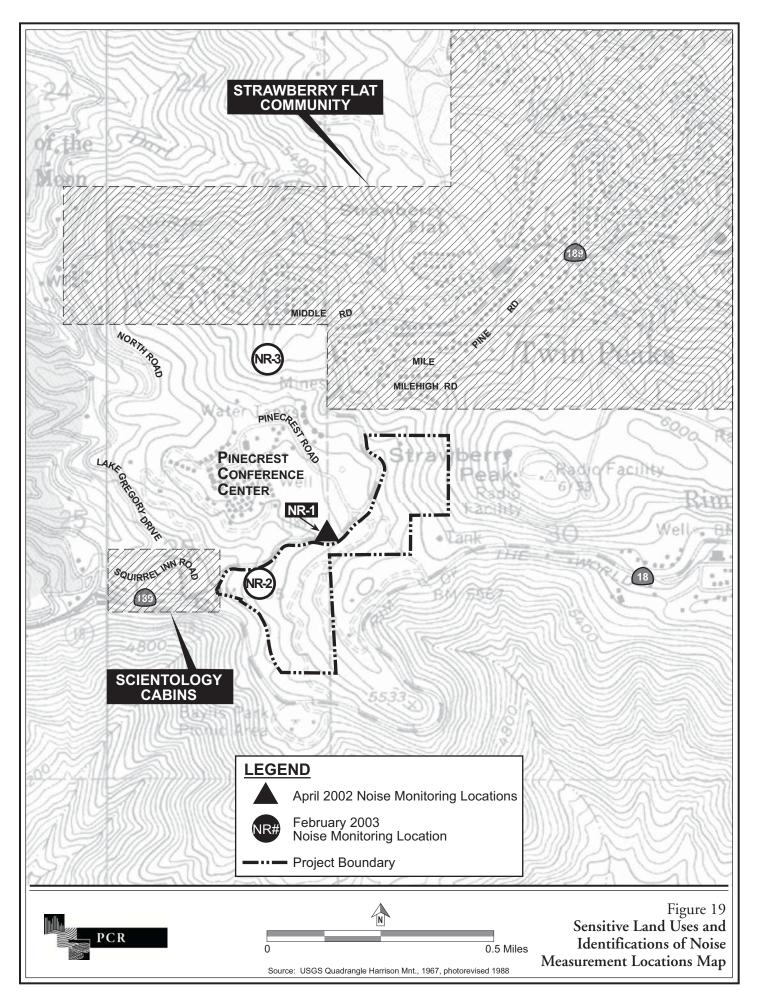
To ascertain existing noise levels, two field surveys were conducted in April 2002 and February 2003. A summary of these surveys is provided below.

(a) Field Survey of April 2002

Short-term field monitoring was conducted by Synectecology on April 19, 2002 to ascertain existing traffic related noise levels along Highway 189 and for calibration of the traffic noise model. Therefore, simultaneous traffic counts were conducted to aid in model calibration. The study included one reading (NR-1), which was obtained at the leveled area immediately across from the project entrance at Pinecrest Road. Pinecrest Road serves as access to the Pinecrest Christian Conference Center (Pinecrest). The meter was placed at a distance of fifty

No person shall operate or cause to be operated any source of sound at any location or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level, when measured on any other property to exceed: (1) The noise standard for that receiving land use for a cumulative period of more than 30 minutes; (2) The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour; (3) The noise standard plus 10 dBA for a cumulative period of more than 5 minutes; (4) The noise standard plus 15 dBA for a cumulative period of more than 1 minutes in any hour; and (5) The noise standard plus 20 dBA for any period of time. If the measured ambient level exceeds any of the fist four noise limit categories, the allowable noise exposure standard should reflect the ambient noise level.

If the alleged offense consists of impact noise or simple tone noise, each of the noise levels are reduced by 5 dBA.



feet from the centerline of the near southwest-bound lane of Highway 189 and approximately 100 feet northeast of Pinecrest Road. The location of NR-1 is shown in Figure 19. The noise measurement indicated an afternoon L_{eq} of 57.8 dBA with noise levels ranging from a minimum of 40.1 dBA to a maximum of 69.8 dBA. The afternoon L_{eq} was below the exterior noise standard of 60 dB for residential land uses as presented in the San Bernardino County General Plan. Please refer to the Focused Noise Study, included as Appendix F of this Draft EIR, for a detailed discussion regarding the field survey.

(b) Field Survey of February 2003

Two 24-hour ambient noise measurements were conducted by PCR Services Corporation on January 21 through 22, 2003 to quantify existing ambient noise levels in the vicinity of the proposed project. The noise measurement locations were placed to account for noise sensitive receptors in the vicinity of the project site and to maximize the line-of-sight from the Strawberry Flat residential area, across the intervening Pinecrest property, to the project site.⁶⁰

NR-2 was located near the western property boundary of the proposed project site approximately 300 feet south of State Highway 189 on a moderately wooded finger ridge just east of the apex formed by State Highways 18 and 189, as shown in Figure 19. The location is representative of the ambient noise levels at the three cabins west of the project site. The result of the reading is included in Table 23 on page 170. The daytime hourly L_{eq} was below the exterior noise standard of 60 dB for residential land uses as presented in the San Bernardino County General Plan.

NR-3 was located approximately 700 feet north of Pinecrest on a heavily wooded finger ridge 250 feet south of the Strawberry Flat area, as shown in Figure 19. The location is representative of the ambient noise levels at the nearest residents in the Strawberry Flat area. The result of the reading is included in Table 23 on page 170. The daytime hourly L_{eq} was below the exterior noise standard of 60 dB for residential land uses as presented in the San Bernardino County General Plan.

Noise technicians noted that Pinecrest was in operation during the field measurements. The sounds of adolescents at play were audible as was the operation of two pieces of heavy-duty construction equipment. Pinecrest provided confirmation that two schools were in attendance during the week of January 20 through 24, 2003. There was a combined attendance of 270 persons from these schools and 20 Pinecrest staff. On January 21, 2003 from 7:00 P.M. to 9:00

The line-of-sight to these noise monitoring locations from the project site and Pinecrest was maximized to account for potential noise sources in the project vicinity and to minimize noise attenuation from structures, topography, or vegetation.

Table 23

AMBIENT NOISE MEASUREMENT DATA

Monitoring Location	CNEL (dBA)	Daytime Hourly ${ m L_{eq}}^a$	$L_{max} (dBA)$
NR-2	49.6	46.2	70.3
NR-3	44.3	43.8	71.2

^a Represents the 15-hour logarithmically weighted sound level that includes a 5 dBA penalty added to noise produced between the hours of 7:00 P.M. and 10:00 P.M.

Source: PCR Services Corporation, May 2003.

P.M., the outdoor basketball court was used for a square dance and amplified sound equipment was used for the music and "caller."

(3) Traffic Noise

The CNEL values resulting from traffic on roadways surrounding the project site were predicted using the California Department of Transportation (Caltrans) Sound32 version of the Federal Highway Administration (FHWA) traffic noise prediction model (Sound32-Release 07/30/91). Average daily traffic (ADT) volumes were based on existing daily traffic volumes provided by Urban Crossroads in the traffic study. To determine the CNEL noise level produced by this traffic, the following Caltrans methodology was used:

- The morning rush hour lasts from 6:00 A.M. to 9:00 A.M. and each hour typically contains two hours of non-rush hour traffic,
- The evening rush hour lasts from 4:00 P.M. to 7:00 P.M. and each hour typically contains two hours of non-rush hour traffic,
- Nighttime traffic is equal to ten percent of the total ADT and is divided between the hours of 10:00 P.M. and 6:00 A.M.

Modeling was performed for the major site access roads through the project area that would receive project-generated traffic. Table 24 on page 171 presents the projected existing noise levels along the site access road in the project area as well as the distances to the 70, 65, and 60 dBA CNEL noise contours. These contours were determined using soft site modeling. Note that the table assumes simple, flat terrain with a clear line-of-site between receptors and vehicles. Any topographic features or grade separation that shields the receptors' view can attenuate the projected noise level. On the other hand, where trucks encounter an uphill grade, noise values may be slightly greater than predicted.

Table 24 PREDICTED EXISTING VEHICULAR TRAFFIC NOISE LEVELS

			Distance to (feet):		
Roadway Segment	ADT	CNEL at 50 Feet (dBA)	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
Highway 18		-			
W/O Lake Gregory Drive	11,400	69	< 50	92	199
Rose Lane - Daley Canyon Road	13,700	70	50	108	232
E/O Daley Canyon Road	6,100	67	< 50	68	146
Highway 189					
Lake Gregory Drive – Pinecrest Road	3,700	62	< 50	< 50	68
Pinecrest Road – W/O North Road	3,500	61	< 50	< 50	58
W/O North Road - North Road	3,800	62	< 50	< 50	69
North Road – Rose Lane	5,000	63	< 50	< 50	79
Rose Lane – W/O Daley Canyon Road	4,300	62	< 50	< 50	69
W/O Daley Canyon Road – Daley Canyon Road	7,300	65	< 50	50	108
Lake Gregory Drive					
N/O North Road	6,600	64	< 50	< 50	92
North Road – Highway 189	6,800	64	< 50	< 50	92
Highway 189 – Highway 18	7,100	64	< 50	< 50	92
Bear Springs Road					
Highway 189 – Highway 18	1,100	56	< 50	< 50	< 50
Daley Canyon Road					
N/O Highway 189	11,100	66	< 50	58	126
Highway 189 – N/O Highway 18	10,700	66	< 50	58	126
N/O Highway 18 – Highway 18	7,800	65	< 50	50	108

(4) Canyon Effects

The project site is located in a mountainous area where sounds travel irregularly. As a result, and depending on location, the same generated noise might be audible over a great distance or it might be almost inaudible.⁶¹ Generally, where a viewers line-of-sight is obscured

As an example, events held at Pinecrest occasionally result in noise complaints filed with the County and sometimes over a mile away from the noise source. While specific data was not available, these complaints generally occur during periods of low ambient noise levels and use of sound amplification equipment at Pinecrest.

by hills or dense forest sound transmission is blocked in a similar manner as a building placed between a noise source and the listener. Occasionally, "canyon" effects occur where the topography creates a channel for sound reflection and carries them over great distances. As discussed in Caltrans Technical Noise Supplement (TeNS), "Studies of highways through canyons typically have shown noise increases of less than 3 dBA from canyon effects. The canyon walls, to some extent, act as parallel sound walls with respect to multiple reflections. However, unless the slopes are perfectly vertical, build up of reflections will be more limited due to slope angles." Note that studies in the TeNS are based on parallel, vertical slopes on either side of a road where the noise will "ping pong" back and forth. When one considers a wall on one side, the TeNS shows that hard surfaces (e.g., sound walls) only increase noise by less than 1 dBA due to reflection. Soft surfaces, such as landscaping or a forest floor, would show even smaller increases due to reflection.

In relation to these studies, the surrounding area has some areas of steep forested terrain, but does not have perfectly vertical slopes. Thus, potential localized canyon effects are anticipated to be negligible. However, since the project area includes steep forested terrain, for a noise receptor overlooking a noise source (e.g., Strawberry Flat residential area overlooking Pinecrest), sound attenuation from potential intervening vegetation may be somewhat limited.

2. THRESHOLDS OF SIGNIFICANCE

The noise significance thresholds presented below are based on industry standards and standards provided by the County of San Bernardino. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernable to most people in an exterior environment. Table 22 and Table 23 on pages 167 and 170 provide the interior/exterior mobile noise

standards and the exterior stationary noise standards for the County of San Bernardino. Based on these factors and County of San Bernardino policies and standards that are relevant for project development, noise impacts are considered significant if any of the following conditions are met:

• The project's operational noise sources increase ambient levels at the nearest receptors above the maximum allowable noise level, based on the land use classification:

- The project's mobile source noise increases the ambient CNEL more than 5 dBA at the nearest sensitive receptors for areas within San Bernardino County that are not designated as "noise-impacted" (62;
- The project's mobile source noise increases the ambient CNEL more than 3 dBA at the nearest sensitive receptors for areas within San Bernardino County that are designated as "noise-impacted";
- The project's operational stationary source noise increases the ambient L_{eq} more than 5 dBA at the nearest sensitive receptors for areas within San Bernardino County that are not designated as "noise-impacted";
- The project's operational stationary source noise increases the ambient L_{eq} more than 3 dBA at the nearest sensitive receptors for areas within San Bernardino County that are designated as "noise-impacted";

A cumulative impact is considered significant if any of the following conditions are met:

- The cumulative noise levels from the project and related projects increase the ambient levels by more than 5 dBA for areas within San Bernardino County that are not designated as "noise-impacted"; or
- The cumulative noise levels from the project and related projects increase the ambient levels by more than 3 dBA for areas within San Bernardino County that are designated as "noise-impacted".

3. ENVIRONMENTAL IMPACTS

a. Methodology

Sound levels decrease (or attenuate) exponentially as the distance from the noise source increases. For a single "point" source, such as a piece of mechanical equipment, the sound level normally attenuates by about 6 dBA for each doubling of the distance. In comparison, sound generated by "linear" sources, such as vehicles traveling along a busy street, attenuates by about 3 dBA for each doubling of the distance. These attenuation rates are based upon "hard" reflective surfaces (e.g., pavement and concrete) and increase for "soft" surfaces (e.g., vegetative

[&]quot;Noise-impacted" refers to areas exposed to existing or future exterior noise levels from mobile or stationary sources exceeding the standards presented in Table 22 and Table 23 on pages 167 and 170 of this Draft EIR.

cover) to 7.5 dBA for a "point" source and 4.5 dBA for a "linear" source. The analysis assumed an attenuation rate of 4.5 dBA for "linear" sources and 7.5 dBA for "point" sources.

Projected noise levels do not include additional attenuation due to intervening topographic features, such as natural terrain, vegetation, rocks and ridgelines, nor do the values account for other on-site structures that may shield on-site activities. The projected noise levels also do not include "atmospheric attenuation" (i.e., the loss of sound energy due to the warming of the air). Sound attenuation effects provided by these features are not considered in this assessment and could somewhat reduce predicted noise levels.⁶³

(1) Construction Noise

The transport of workers and movement of construction materials could incrementally increase noise levels along local access roads. Methodology included in the California Air Resources Board's URBEMIS computer model estimates that the project would require 35 workers and would generate 11 truck trips per day.

Construction is performed in discrete steps (site preparation, grading, and construction), each of which has its own mix of equipment, and, consequently, its own noise characteristics. However, despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 25 on page 175 lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and noise receptor.

Composite construction noise is best characterized by Bolt, Beranek, and Newman (USEPA December 31, 1971). In this study, construction noise for commercial development is presented as 89 dBA L_{eq} when measured at a distance of 50 feet from the construction effort. This value takes into account both the number of pieces and spacing of the heavy equipment used in the construction effort. In later phases during building construction, noise levels are typically reduced from this value as physical structures further break up line-of-sight noise transmission. In order to present a "worst-case" scenario, the 89 dBA value is assumed to remain constant throughout the term of the construction effort.

would reduce noise by an additional 5 dBA."

As an example, Caltrans recommends the following noise reduction for line noise sources where trees and vegetation are dense and thick: "For a vegetative strip to have a noticeable effect on noise levels it must be dense and wide. A strand of trees with a height that extends at least 16 feet above the line of sight between the source and receiver must be at least 100 feet wide and dense enough to completely obstruct a visual path to the source to attenuate traffic noise by 5 dBA. The effects appear to be cumulative, i.e., 200 feet wide strand of trees

Table 25
NOISE LEVELS GENERATED BY TYPICAL CONSTRUCTION EQUIPMENT

Type of Equipment	Range of Sound Levels Measured (dBA at 50 feet)	Suggested Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers (12,000 to 18,000 foot-pounds/blow)	81 to 96	93
Rock Drills	83 to 99	96
Jack Hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	68 to 80	77
Dozers	85 to 90	88
Tractors	77 to 82	80
Front-End Loaders	86 to 90	88
Hydraulic Backhoes	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 86	86
Trucks	81 to 87	86

Source: USEPA, Bolt, Beranek, and Newman, Noise Control for Buildings and Manufacturing Plants, 1987.

(2) Operation Noise

For traffic noise, project-generated traffic was based on evening peak-hour movement activities. The number of trips arriving to and departing from the site during the evening peak hour, as described in Section 3.I., Transportation and Circulation, and in the Traffic Impact Analysis prepared for the project, Appendix G, was summed and the total daily traffic volume divided by this sum to create a multiplier. This multiplier was then used to augment the project-generated traffic volumes at the intersections and these augmented values were added to the existing daily traffic. The ratio of cars and trucks on the highways was based on Caltrans 2000 Annual Average Daily Truck Traffic on the California State Highway System (2001). This ratio included 82 percent autos, 17 percent medium trucks, and one percent heavy trucks along Highway 18. Caltrans reported that Highway 189 included 94 percent autos and six percent medium trucks. No heavy trucks were reported. Other roads through the project area were assumed to have a ratio similar to Highway 189. As most of the area has no posted speed limit, vehicles were assumed to average 35 miles per hour due to the mountainous terrain.

To obtain representative noise levels at the proposed gun range, Synectecology conducted measurements at the City of Pasadena Shooting Range. The complete set of measurement results are presented in the Focused Noise Study, included as Appendix F of this Draft EIR. The results of the assessment show that at 50 feet from the source, a nine-millimeter rifle produces L_{eq} noise levels of about 84.5 dBA. A nine-millimeter rifle is similar in caliber to a .22-caliber rifle and thus the above results may also be used to represent a .22-caliber rifle. Assuming a single gun

produces a noise level of 85 dBA at 50 feet, the simultaneous use of ten guns is assumed to produce a noise level of 95 dBA at 50 feet.

In order to characterize noise levels from amphitheaters, Synectecology conducted measurements for stadium noise at five high school football games. These stadiums varied in crowd size from about 2,500 to about 5,000 people. The public address systems were arranged facing the audience in the bleachers. Noise levels produced from the use of the public address systems, crowd cheers, and marching bands were extrapolated to values between approximately 57 and 76 dBA L_{eq} at a distance of 500 feet. While the amphitheater has a similar shape to the enclosed bleachers at some of the monitored football stadiums, the proposed amphitheaters would not be expected to generate noise levels comparable to a high school football game (and its attendant public address system and marching bands). Therefore, the analysis provided in the Focused Noise Study used the low end of the scale (i.e., 57 dBA L_{eq} as measured at a distance of 500 feet).

Representative noise levels for sports activities were established by Synectecology based on noise measurements taken of athletic activities at parks in Southern California. The complete set of measurement results are presented in the Focused Noise Study included as Appendix F of this Draft EIR. The results of the assessment provide a noise level of 57 dBA L_{eq} at a measured distance of 100 feet as a reasonable estimate of athletic activity noise. This value was applied to each athletic activity area.

b. Analysis of Project Impacts

(a) Construction

Construction of the proposed project is anticipated to occur incrementally; Table 4 on page 24 presents the different phases of construction for development of the project. Construction of Phase 1 is anticipated to occur from July 2004 to November 2004. No specific time frames have been established for each of the succeeding phases; however, construction of Phases 2 to 8 is anticipated to commence in July 2005 and continue for approximately five years, as funds and weather permit. Accordingly, the estimated completion date for the project is March 2010. Project construction would be limited in time and noise by the County Ordinance. In accordance with Section 87.0905 (e) (Performance Standards), construction would not take place between the hours of 7:00 P.M. and 7:00 A.M. on weekdays, including Saturday, or at any time on Sunday or a federal holiday. During all project site preparation, grading, and construction, the project contractor(s) would be required to equip all construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards.

H-1. Construction Noise Impacts. Daily construction noise levels are expected to substantially exceed ambient noise levels. This is a short-term *Significant Impact*.

The transport of workers and movement of construction materials could incrementally increase noise levels along local access roads. Even though there could be a relatively high single event noise exposure potential with passing trucks (a maximum noise level of 86 dBA at 50 feet), the increase in noise would be less than 1 dBA CNEL and would, therefore, have a less-than-significant impact on noise receptors along the truck routes.

The operation of construction equipment would result in the generation of both steady and episodic noise levels significantly above those ambient levels currently experienced near the sensitive noise receptors located closest to the project site. The nearest off-site receptors include three cabins located near the western project boundary. The closest cabin is approximately 80 feet from the project boundary and about 250 feet from the nearest construction (i.e., asphalt road). At this distance soft-site spreading losses would reduce construction noise to approximately 72 dBA L_{eq}. The nearest homes in the Strawberry Flat area are located approximately 750 feet from the northern boundary. Based on this distance, construction noise would be reduced to no more than 60 dBA L_{eq}. Pinecrest is located about 700 feet from the project site across Highway 189. At this distance construction noise would be attenuated to a level of about 60 dBA L_{eq}. In comparison to ambient noise levels in the project vicinity, noise levels during maximum construction activities could increase by 22 dBA at the cabins west of the project site and 16 dBA at Pinecrest and the nearest homes in the Strawberry Flat area. This increase in temporary noise levels without specific restrictions and incorporation of mitigation measures would result in a short-term significant impact.⁶⁴

(b) Project Operation

This following discussion addresses potential noise impacts related to long-term operation of the proposed project. Specific noise sources considered include roadway noise and on-site activities including the use of a proposed gun range, two amphitheaters, and various outdoor sport activities. A more detailed discussion of long-term operational impacts is provided in the Focused Noise Study, Appendix F to this Draft EIR.

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Note that this is a worst-case scenario. During the vast majority of the construction period, noise levels could be substantially lower due to reduced power settings and sound attenuation effects provided by longer distances as construction activities move more central to the project site and away from the project boundary.

H-2. Traffic Related Noise. Operation of the proposed project would generate traffic volumes to and from the project site, which would, in turn, generate an increase in roadway noise. This increase is not anticipated to exceed the noise threshold. This is a *Less-Than-Significant Impact*.

Table 26 on page 179 presents the existing daily-plus-project traffic volumes and resultant noise levels and compares these levels to existing traffic-generated noise levels throughout the project area. As noted, noise levels along Highway 189 (between Lake Gregory Road and Pinecrest Road) could increase by as much as 0.2 dBA CNEL. This increase is less than audible and well under the 5 dBA threshold of significance for areas not "noise impacted." Therefore, traffic-related noise generated by project traffic is considered a less-than-significant impact.

H-3. Gun Range Noise. Operation of the gun range would cause noise levels to exceed standards at sensitive receptor sites in the vicinity of the project. This is a *Significant Impact*.

A 50-yard gun range is proposed in the southwestern portion of the project site. This facility would be in periodic use from 10:00 A.M. to no later than 4:30 P.M. Most shooting would occur using "bb" and pellet rifles, neither of which would produce any substantial noise because they are fired with compressed air as opposed to gunpowder. However, approximately five times per year 0.22-caliber type or nine-millimeter guns may be used and, therefore, were analyzed in the Focused Noise Study.⁶⁵

The proposed project provides numerous design features for the gun range to reduce noise while increasing safety in compliance with applicable regulations. The range, proposed at the southern most edge of the site, would be enclosed along its sides with an eight-foot log wall placed atop an eight-foot earthen berm for a total enclosure height of 16 feet. The far end of the range would include an eight-foot wall atop a 20-foot berm, for a total height of 28 feet. A tenfoot wall would be located behind the shooters. Additionally, the area that contains the firing stalls would be enclosed on the sides and would have a sheet steel roof and additional baffles, both of which would be treated with an acoustical material along the undersides. Collectively, these project features are assumed to provide a 5 dBA reduction in noise from the gun range.

⁶⁵ Hogle-Ireland, Responses to PCR Request for Information, dated July 16, 2002, September 30, 2002.

Table 26

EXISTING-PLUS-PROJECT TRAFFIC AND RESULTANT NOISE LEVELS ALONG MAJOR THOROUGHFARES IN THE PROJECT AREA

Roadway Segment	Existing ADT	Existing CNEL at 50 Feet (dBA)	Existing With Project ADT	Existing With Project CNEL at 50 Feet (dBA)	Difference In CNEL at 50 feet
Highway 18					
W/O Lake Gregory Drive	11,400	69.3	11,495	69.3	0.0
Rose Lane - Daley Canyon Road	13,700	70.1	13,707	70.1	0.0
E/O Daley Canyon Road	6,100	66.6	6,114	66.6	0.0
Highway 189					
Lake Gregory Drive – Pinecrest Road	3,700	61.6	3,801	61.8	0.2
Pinecrest Road – W/O North Road	3,500	61.4	3,534	61.4	0.0
W/O North Road - North Road	3,800	61.7	3,834	61.8	0.1
North Road – Rose Lane	5,000	62.9	5,034	63.0	0.1
Rose Lane – W/O Daley Canyon Road	4,300	62.3	4,327	62.3	0.0
W/O Daley Canyon Road	7,300	64.6	7,327	64.6	0.0
Lake Gregory Drive					
N/O North Road	6,600	64.1	6,607	64.1	0.0
North Road – Highway 189	6,800	64.3	6,807	64.3	0.0
Highway 189 – Highway 18	7,100	64.4	7,195	64.5	0.1
Bear Springs Road					
Highway 189 – Highway 18	1,100	56.3	1,107	56.4	0.1
Daley Canyon Road					
N/O Highway 189	11,100	66.4	11,120	66.4	0.0
Highway 189 – N/O Highway 18	10,400	66.1	10,707	66.1	0.0
N/O Highway 18 – Highway 18	7,800	64.9	8,007	64.9	0.0
Source: Synectecology, October 2003.					

Source: Synectecology, October 2003.

The nearest cabin is located approximately 1,075 feet from the gun range. At this distance, shooting noise of 90 dBA at 50 feet would be reduced to no more than 57 dBA $L_{\rm eq}$. This value exceeds the County's daytime standard of 50 dBA for impact noise by 7 dBA. In comparison to the measured ambient daytime noise level of 46 dBA at NR-2, gun range activities

The Performance Standards assess a 5 dBA penalty to percussive noise (e.g., gunfire) and, therefore, the stationary source daytime standard is reduced from 55 dBA to 50 dBA Leq.

could increase the ambient noise level by approximately 11 dBA.⁶⁷ Therefore, gun range noise at this cabin would be in excess of the 5 dBA incremental significance threshold and would be considered a significant impact.

The nearest residents in the Strawberry Flat area are located approximately 2,960 feet from the gun range. At this distance, assuming there were no other topographic features to attenuate shooting noise, the calculated noise level for range operations is 46 dBA. This value is less than the 50-dBA County daytime standard. In comparison to the measured ambient daytime noise level of 44 dBA at NR-3, gun range activities could increase the ambient noise level by approximately 4.3 dBA. Therefore, gun range noise at the closest residences in the Strawberry Flat area would be below the 5 dBA incremental significance threshold. Therefore, for the residences in the Strawberry Flat area, gun range noise is considered a less-than-significant impact.

H-4. Amphitheater Noise. Nearby cabins and certain residential properties in the Strawberry Flat area would experience increases in ambient noise that exceed County standards. This is a *Significant Impact*.

Two outdoor amphitheaters are proposed as part of the camp facility. A western style amphitheater, the smaller of the two, would be located on the northern portion of the project site with the seats facing south toward the fort with a capacity to seat 300 people. The use of this small amphitheater would be limited to Wednesdays through Saturdays from 6:00 P.M. to no later than 10:00 P.M. The larger amphitheater would be located on the southwestern portion of the project site with the seats facing south with a capacity to seat 1,000 people; the use of this amphitheater would be limited to Fridays, Saturdays, and Sundays from 8:00 A.M. to no later than 10:00 P.M. The sound system would be integrated within the aisle ways of the seating area to help keep sound at the audience level. This design would reduce sound volumes in comparison to a standard amplified sound system that would project much louder sound beyond the theater.

The nearest cabin is located approximately 860 feet from the larger, southern amphitheater. At this distance the calculated noise level would be 51 dBA. This value is below the County's daytime standard of 55 dBA. However, in comparison to the measured ambient daytime noise level of 46 dBA at N-2, amphitheater noise could increase the ambient noise level by approximately 6.1 dBA. Therefore, amphitheater noise at the closest cabin would be in

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When combining sound levels, values that differ by 0 to 1 dB increase the higher value by 3 dB; values that differ by 2 or 3 dB increase the higher value by 2 dB; values that differ by 4 to 9 dB increase the higher value less than 1 dB; and values that differ by 10 dB or more increase the higher value negligibly.

excess of the 5 dBA incremental significance threshold and would be considered a potentially significant impact.

The nearest residents in the Strawberry Flat area are located approximately 1,290 feet from the closest amphitheater. At this distance the calculated noise level would be 47 dBA. This value is less than the 55-dBA County daytime standard. However, in comparison to the measured ambient daytime noise level of 44 dBA at N-3, amphitheater noise could increase the ambient noise level by approximately 5.1 dBA. Therefore, amphitheater noise at the closest residences in the Strawberry Flat area would be in excess of the 5 dBA incremental significance threshold and would be considered a potentially significant impact.

H-5. Recreational Activities. Outdoor recreational activities associated with a swimming pool area, basketball and volleyball courts, field hockey, and other activities would generate noise that could exceed noise standards. This is a *Less-Than-Significant Impact*.

The proposed project includes various recreational facilities as further described in the Project Description. Most notable are the larger venues including pools, the field hockey arena, and basketball and volleyball courts. As previously mentioned in the operation methodology, a noise level of 57 dBA L_{eq} at a measured distance of 100 feet is a reasonable estimate of athletic activity noise. The aforementioned recreational activities alone would not result in noise levels above the County daytime standard of 55 dBA, nor would they generate an increase over ambient noise in excess of the 5 dBA incremental significance threshold at the residential receptor sites. Therefore, noise associated with recreational activities alone is considered a less-than-significant impact.

H-6. Combined Noise Levels. Combined noise levels from the gun range, amphitheaters, and recreational activities would exceed noise standards for residential receptors adjacent to the site and in the Strawberry Flat area. This is a *Significant Impact*.

A reasonable worst-case scenario would combine the noise from the gun range with that from the two amphitheaters and the various noted athletic activities. The noise from each of these activities was logarithmically summed at the nearest cabin to the west and at the nearest residential receptor in the Strawberry Flat area. These noise levels are included in Table 27 on page 182.

The nearest cabin could be exposed to noise from on-site activities of $58.1 \ dBA \ L_{eq}$. This value exceeds the County's daytime standard of $55 \ dBA$ by $3.1 \ dBA$. In comparison to the measured ambient daytime noise level of $46 \ dBA$ at NR-2, combined on-site activities could

Table 27

COMBINED NOISE LEVELS GENERATED BY ON-SITE ACTIVITIES

	Western	Western Cabins		Flat Area
Activity	Distance (Feet)	Project Noise Level (dBA Leq)	Distance (Feet)	Project Noise Level (dBA Leq)
Gun Range	1,075	57	2,960	46
Southern Amphitheater	860	51	2,880	38
Northern Amphitheater	2,260	41	1,290	47
Archery Range	950	33	3,250	19
Pool Area	650	37	2,950	20
Field Hockey	950	33	2,600	22
Northern Activity Area	2,500	22	850	34
Total		58.1		50.0

Note: Based on a soft-site spreading loss of 7.5 dBA, but does not include attenuation for intervening structures, vegetation, topography, etc.

Source: Synectecology, October 2003.

increase the ambient noise level by approximately 12 dBA. Therefore, noise from combined activities at these cabins would be in excess of the 3-dBA incremental significance threshold for "noise-impacted" areas. Therefore, for the nearest residential receptors, combined noise levels are considered a potentially significant impact.

The nearest residents in the Strawberry Flat area could be exposed to noise from on-site activities of $50.0~\mathrm{dBA}~\mathrm{L_{eq}}$. This value is less than the County daytime standard of $55~\mathrm{dBA}$. However, in comparison to the measured ambient daytime noise level of $44~\mathrm{dBA}~\mathrm{at}~\mathrm{NR}\text{-}3$, combined on-site activities could increase the ambient noise level by approximately $7~\mathrm{dBA}$. Therefore, noise from combined activities at these residences would be in excess of the $5\mathrm{-dBA}~\mathrm{incremental}~\mathrm{significance}~\mathrm{threshold}~\mathrm{for}~\mathrm{areas}~\mathrm{that}~\mathrm{are}~\mathrm{not}~\mathrm{classified}~\mathrm{as}~\mathrm{"noise-impacted."}$ Therefore, combined noise levels for the nearest residential receptor in the Strawberry Flat area are considered a potentially significant impact.

4. CUMULATIVE IMPACTS

There are no past, present or probable future projects within the project area that are proximate enough to result in additive construction noise. In addition, the related projects are either of a commercial nature and not typically associated with exterior noise, or, are located sufficient distance from the subject property such that on-site noise produced by those projects

would is not assumed to be additive to project-related noise. However, traffic from related projects, as well as ambient growth, would use the same roadways and be additive to project-generated mobile noise sources. The cumulative analysis assumes an area-wide growth rate to reflect future development and redevelopment activities likely to occur in the general project area as well as to address the potential impacts of future projects not specifically identified by the County. All build-out traffic volumes are as presented in the project traffic analysis. ADT volumes were determined from intersection movements using the methodology discussed for existing conditions and project-related impacts.

Table 28 on page 184 compares Year 2020 traffic volumes both without and with project implementation. Because the cumulative increase in traffic-related noise is well below the three dBA CNEL criterion for significance, cumulative impacts are considered less than significant. Additionally as noted in Table 28, the project's contribution to this 1.3-dBA increase could be as much as 0.1 dBA CNEL. This increase is too small to be audible, and again, would be less than significant.

H-7. Cumulative Noise. Cumulative noise from activities at the project site with concurrent operation of the Pinecrest Amphitheater would exceed noise standards for residential receptors adjacent to the site and in the Strawberry Flat area. This is considered a *Cumulatively Significant Impact*.

Another potential for cumulative impacts relates to combined noise effects that would occur when proposed project activities coincide with activities at the Pinecrest Conference Center located immediately to the northwest of the site. The cabins located to the west of the project site are approximately 1,200 feet from the central portion of the Pinecrest facility. If it is assumed that Pinecrest were to operate an amphitheater with noise similar to that projected for the proposed project, the projected noise level at the cabins from the Pinecrest amphitheater would be 47 dBA L_{eq}. This value would be additive with noise produced from Royal Ranger onsite activities (i.e., 58.1 dBA L_{eq}) for a combined noise level of 58.4 dBA. This value exceeds the County's daytime standard of 55 dBA by 3.4 dBA. In comparison to the measured ambient daytime noise level of 46 dBA at NR-2, cumulative noise could increase the ambient noise level by approximately 12.4 dBA. Therefore, noise from cumulative activities at these cabins would be in excess of the 3 dBA incremental significance threshold for "noise-impacted" areas and such noise levels are therefore considered a potentially significant cumulative impact for the cabins located to the west of the site.

With respect to the Strawberry Flat area, the nearest residents are approximately 1,500 feet from Pinecrest activities with a projected noise level of 45 dBA L_{eq} from Pinecrest operations. This level, when combined with that from the Royal Rangers site (i.e., 50.0 dBA L_{eq}) would create a composite level of 51.2 dBA L_{eq} and would not exceed the County daytime noise standards. However, in comparison to the measured ambient daytime noise level of 44

Table 28 CUMULATIVE ANALYSIS FOR TRAFFIC-GENERATED NOISE LEVELS ALONG MAJOR THOROUGHFARES IN THE PROJECT AREA

Roadway Segment	Existing CNEL at 50 feet (dBA)	Year 2020 Without Project CNEL at 50 Feet (dBA)	Year 2020 With Project CNEL at 50 Feet (dBA)	Cumulative Increase over Existing CNEL at 50 Feet (dBA)
Highway 18				
W/O Lake Gregory Drive	69.3	70.4	70.4	1.1
Rose Lane - Daley Canyon Road	70.1	71.2	71.2	1.1
E/O Daley Canyon Road	66.6	67.7	67.7	1.1
Highway 189				
Lake Gregory Drive – Pinecrest Road	61.6	62.7	62.9	1.3
Pinecrest Road – W/O North Road	61.4	62.5	62.5	1.1
W/O North Road - North Road	61.7	62.7	62.8	1.1
North Road – Rose Lane	62.9	64.1	64.1	1.2
Rose Lane – W/O Daley Canyon Road	62.3	63.4	63.4	1.1
W/O Daley Canyon Road – Daley Canyon Road	64.6	65.7	65.7	1.1
Lake Gregory Drive				
N/O North Road	64.1	65.1	65.1	1.0
North Road – Highway 189	64.3	65.3	62.3	1.0
Highway 189 – Highway 18	64.4	65.5	65.5	1.1
Bear Springs Road				
Highway 189 – Highway 18	56.3	57.4	57.4	1.1
Daley Canyon Road				
N/O Highway 189	66.4	67.5	67.6	1.2
Highway 189 – N/O Highway 18	66.1	67.2	67.2	1.1
N/O Highway 18 – Highway 18	64.9	66.0	66.0	1.1
Source: Synectecology, October 2003.				

dBA, cumulative noise could increase the ambient noise level by approximately 8.1 dBA. Therefore, noise from cumulative activities at these residences would be in excess of the 5-dBA incremental significance threshold. Therefore, noise associated with concurrent operation of the Pinecrest and Royal Rangers is considered a potentially significant cumulative impact for the nearest residents in the Strawberry Flat area.

5. MITIGATION MEASURES

a. Construction

Based on the presence of potentially significant construction impacts, the following mitigation measures are recommended as conditions of project approval:

- **MM-H1(a)** The construction contractor shall place all stationary construction equipment as far as feasible from near-site residential receptors, situated so that emitted noise is directed away from the receptors located to the south and east of the project site.
- **MM-H1(b)** The construction contractor shall locate equipment staging areas in the central portion of the site to create the greatest distance between construction-related noise sources and sensitive receptors during all project site preparation, grading, and construction activities.
- **MM-H1(c)** The construction contractor shall provide a construction schedule to nearby residents prior to commencement of construction and designate a construction relations officer to serve as liaison with residents.

b. Operation

Potential long-term noise from on-site activities could exceed both the County's daytime noise standard and increase ambient noise levels by more than 3 dBA or 5 dBA, as applicable. The applicant has provided an array of noise reduction features in the project design that may reduce these noise impacts to less than significant. However, because there is a level of uncertainty in any projection of noise over complicated terrain and the impact is potentially significant, the following mitigation measures are proposed:

MM-H3(a) Upon completion of the firing range, and prior to public use, the applicant shall perform noise monitoring for live firing operations following consultation with the County regarding methodology. These operations are to include ten shooters engaged in typical firing operations using equipment expected to be typical of that used by the campers. Noise levels are to be obtained at all off-site residential land uses located within 3,000 feet of the range. Firing operations are to occur for a period of no less than 15 minutes for any monitoring location. Noise parameters to be measured are those specified in the County of San Bernardino Noise Element, including the values that are exceeded 30 minutes, 15 minutes, five minutes, and one minute in any one hour (i.e., L₅₀, L₂₅, L₀₈, and L₀₂). The maximum and minimum values (L_{max} and L_{min}) shall also be recorded. (Note that these

values may be extrapolated from any readings that are less than one-hour's duration.) The findings of the noise monitoring shall be incorporated into a report for applicant submittal to the County for review and approval. If all values are found to be within County standards, no further mitigation is warranted.

MM-H3(b) If the noise associated with gun range operations exceeds 45 dBA L_{eq} or the County standards at one or more residences, the applicant shall either modify the range and/or place restrictions on the number of shooters and/or type of allowable weapons to further reduce this noise. Subsequent to such modifications, the applicant shall conduct further noise monitoring, as described above. This shall continue until the applicant can conclusively demonstrate that range operations will not exceed either County standards or a L_{eq} of 45 dBA. No public use of the range may occur until a report is submitted by the applicant and approved by the County that demonstrates that the standards have been attained at all off-site residential units.

MM-H4(a) Prior to approval of amphitheater operation, the applicant shall perform noise monitoring, based on County approved methodology, during a "test-case" amphitheater event. The amphitheaters shall be in complete form with all proposed public address equipment functioning as intended. Noise levels are to be obtained for each amphitheater at a representative sampling of off-site residential land uses located within approximately 1,500 feet of each amphitheater. Noise parameters to be measured are those specified in the County of San Bernardino Noise Element, including the L_{eq} and the values that are exceeded 30 minutes, 15 minutes, 5 minutes, and 1 minute in any hour (i.e., L₅₀, L₂₅, L₀₈, and L₀₂). The maximum and minimum values (L_{max} and L_{min}) shall also be recorded. (Note that these values may be extrapolated from any readings that are less than 1-hour's duration.) The findings of the noise monitoring shall be incorporated into a report submitted by the applicant to the County for review and approval. If all values are within County standards, no further mitigation is warranted.

MM-H4(b) If the noise associated with amphitheater operations exceeds 45 dBA $L_{\rm eq}$ or the County standards at one or more residences, the applicant shall either modify the amphitheater(s) sound amplification system and/or propose restrictions on theater use (e.g., amplification levels, occupancy, duration, time). Subsequent to such modifications, the applicant shall conduct further noise monitoring, as described above. This shall continue until a report is submitted by the applicant and approved by the County that demonstrates that amphitheater operations will not exceed either County standards or an $L_{\rm eq}$ of 45 dBA.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Construction

The project would comply with Section 87.0905 (e) (Performance Standards) restrictions on days and hours of construction activities. However, short-term construction noise levels during maximum construction activities could still increase ambient noise levels by 22 dBA at the cabins west of the project site and 16 dBA at Pinecrest and the nearest homes in the Strawberry Flat area. Therefore, even with incorporation of mitigation measures construction noise levels could exceed the 5-dBA incremental threshold and result in a short-term significant unavoidable impact. Any cumulative projects within the project area are located sufficiently far such that construction noise would not be additive and would therefore be less than significant.

b. Operation

(1) On-Site Activities

With incorporation of the above mitigation measures, operational noise impacts associated with on-site activities would be reduced to the noise levels included in Table 29 on page 188. The noise level at the nearest cabin would be reduced to a noise level of 49 dBA L_{eq} . This value complies with County's daytime standard of 55 dBA. In comparison to the measured ambient daytime noise level of 46 dBA L_{eq} at N-2, the ambient noise level would increase by 4.8 dBA. Therefore, project related noise from on-site activities would be reduced to below the 5-dBA significance threshold for areas that are not classified as "noise-impacted".

The noise level at the nearest residents in the Strawberry Flat area would be reduced to a noise level of 46 dBA $L_{\rm eq}$. This value complies with the County's daytime standard of 55 dBA. In comparison to the measured ambient daytime noise level of 44 dBA $L_{\rm eq}$ at N-3, the ambient noise level would increase by 4.2 dBA. Therefore, project related noise from on-site activities would be reduced to below the 5-dBA significance threshold for areas that are not classified as "noise-impacted."

Even with incorporation of the above mitigation measures, overlap of activities at the proposed project site and at the Pinecrest Conference Center may still occur and, therefore, cumulative noise levels have been further evaluated. Pinecrest amphitheater noise is estimated to be approximately 47 dBA L_{eq} at the closest cabin west of the project site. This value would be additive with noise produced from Royal Ranger on-site activities (i.e., 49.3 dBA L_{eq}) for a combined level of 51.3 dBA and would comply with the County's daytime standard of 55 dBA. In comparison to the measured ambient daytime noise level of 46 dBA L_{eq} at N-2, the ambient noise level would increase by 6.3 dBA and would be above the 5 dBA significance threshold for

Table 29

COMBINED NOISE LEVELS GENERATED BY ON-SITE ACTIVITIES WITH INCORPORATION OF MITIGATION MEASURES

	Western Cabins		Strawberry Flat Area	
Activity	Distance (Feet)	Project Noise Level (dBA Leq)	Distance (Feet)	Project Noise Level (dBA Leq)
Gun Range	1,075	45	2,960	34
Southern Amphitheater	860	45	2,880	32
Northern Amphitheater	2,260	41	1,290	45
Archery Range	950	33	3,250	19
Pool Area	650	37	2,950	20
Field Hockey	950	33	2,600	22
Northern Activity Area	2,500	22	850	34
Total		49.3		45.9

Note: Based on a soft-site spreading loss of 7.5 dBA, but does not include attenuation for intervening structures, vegetation, topography, etc.

Source: Synectecology, October 2003 and PCR Services Corporation, May 2003.

areas that are not classified as "noise-impacted". Therefore, cumulative noise from the combined use of the Royal Rangers and Pinecrest amphitheaters would be considered significant and unavoidable.

Pinecrest amphitheater noise is estimated to be approximately 45 dBA L_{eq} at the closest resident in the Strawberry Flat area. This value would be additive with noise produced from Royal Ranger on-site activities (i.e., 45.9 dBA L_{eq}) for a combined level of 48.4 dBA and would comply with the County's daytime standard of 55 dBA. In comparison to the measured ambient daytime noise level of 44 dBA L_{eq} , the ambient noise level would increase by 5.8 dBA and would be above the 5 dBA significance threshold for areas that are not classified as "noise-impacted". Therefore, cumulative noise from the combined use of the Royal Rangers and Pinecrest amphitheaters is considered a significant and unavoidable impact.

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES I. TRANSPORTATION AND CIRCULATION

The following transportation and circulation analyses are based upon the technical report prepared by Urban Crossroads, Inc., revised in June 2003. A copy of this traffic impact analysis report is provided in Appendix G of this Draft EIR.

1. ENVIRONMENTAL SETTING

a. Existing Roadway System

Highway 189 and Rim of the World Highway (Highway 18) provide regional access to the project site. Various arterial roadways in the project vicinity provide local access to the project site. These arterial roadways include North Road to the north of the project site, Lake Gregory Drive to the west of the project site, Pinecrest Road immediately north of the project site, and Bear Springs Road and Daley Canyon Road to the east of the project site. The existing lane configuration and intersection controls at the intersections on these roadways and other local streets in the study area are shown in Figure 20 on page 190.

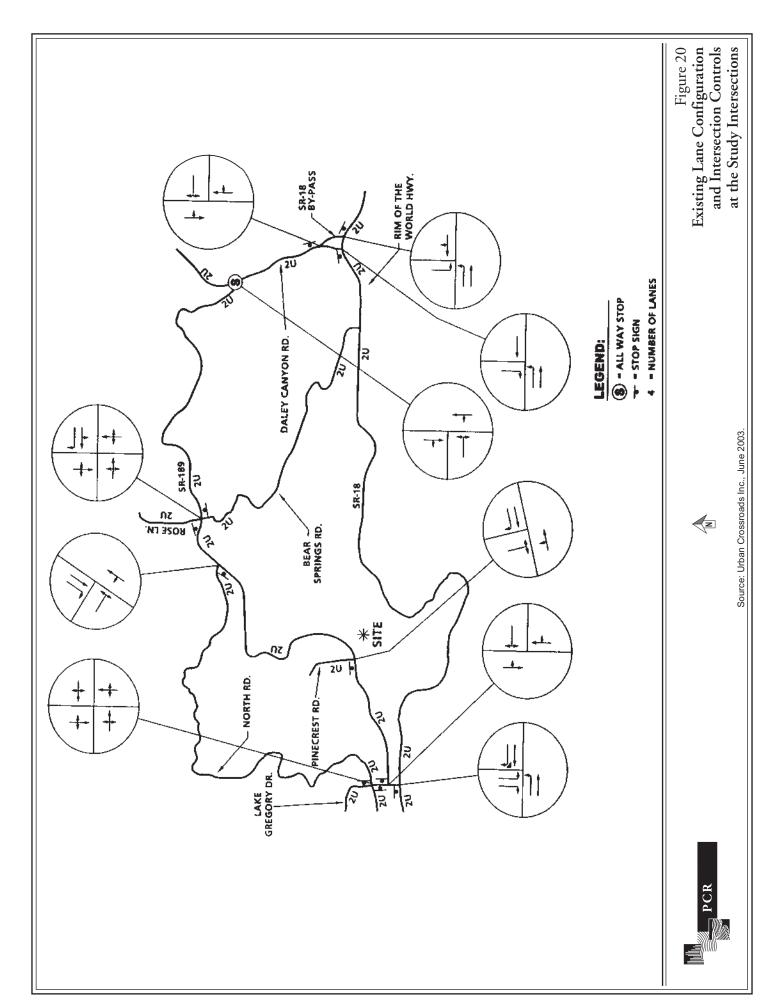
b. Existing Traffic Conditions

(1) Existing Traffic Volumes

Peak hour traffic counts at 10 study intersections were conducted during weekday (Friday) P.M. and weekend (Sunday) P.M. peak hours. These study intersections include the following intersections:

- Lake Gregory Drive and North Road;
- Lake Gregory Drive and Highway 189;
- Lake Gregory Drive and Highway 18;
- Pinecrest Road and Highway 189;
- North Road and Highway 189;

- Bear Springs Road and Highway 189;
- Daley Canyon Road and Highway 189;
- Daley Canyon Road and Highway 18;
- Daley Canyon Road and Highway 18 By-Pass; and
- Highway 18 By-Pass and Highway 18.



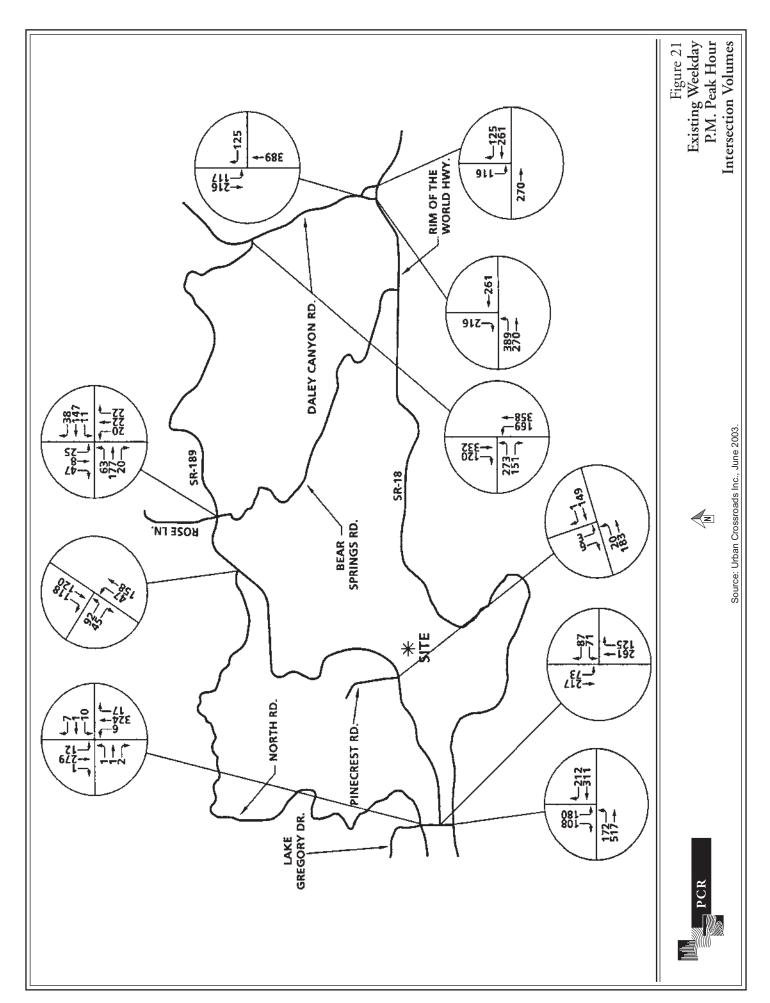
Weekday P.M. peak hour traffic volumes were determined by counting the two-hour period from 4:00 P.M. to 6:00 P.M. on a Friday. Similarly, the weekend P.M. peak-hour traffic volumes were identified by counting a two-hour period from 1:00 P.M. to 3:00 P.M. on a Sunday. As discussed with the County of San Bernardino, these time periods are expected to have the highest number of vehicles traveling to and from the project site. Furthermore, a 12 percent peak season factor has been applied to the counted volumes to provide a "worst case" scenario. The existing peak hour traffic volumes for the 10 study intersections are shown in Figure 21 on page 192 and Figure 22 on page 193 for the weekday P.M. peak hour and the weekend P.M. peak hour, respectively.

(2) Level of Service Definitions

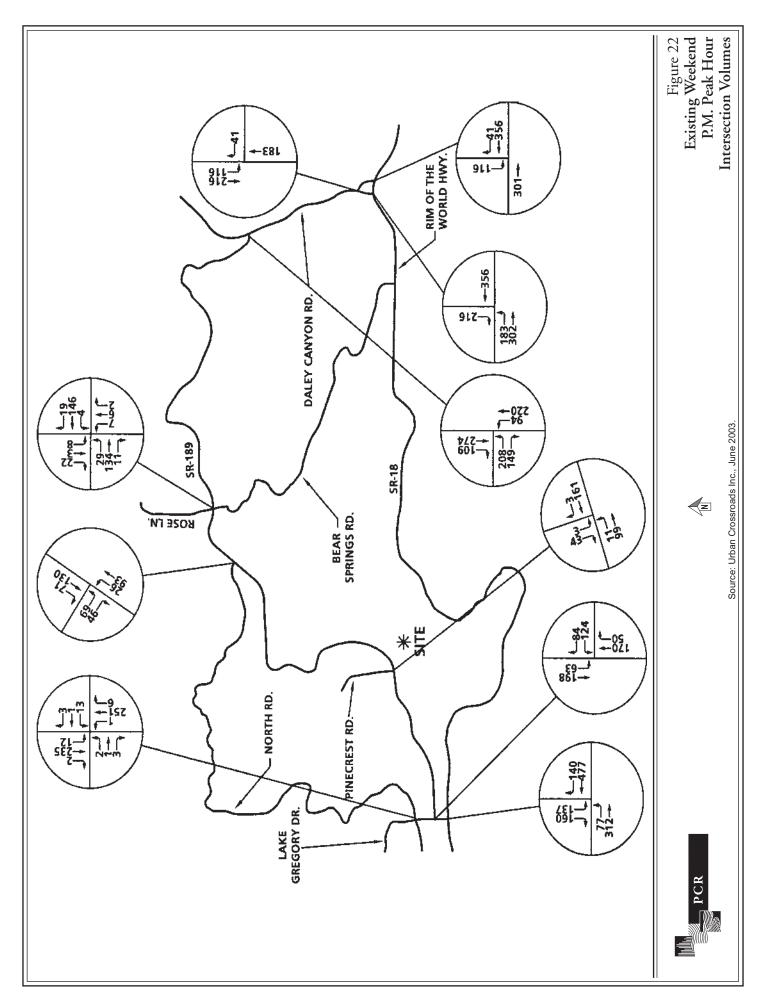
The current technical guide to the evaluation of traffic operations is the 1997 Highway Capacity Manual (HCM), prepared by the Transportation Research Board. The HCM defines level of service (LOS) as a qualitative measure that describes operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The definitions of LOS for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are as follows:

- LOS A represents free flow, and individual users are virtually unaffected by the presence of others in the traffic stream;
- LOS B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable; also, freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver;
- LOS C is in the range of stable flow but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream:
- LOS D represents high-density but stable flow; speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience;
- LOS E represents operating conditions at or near the capacity level in which all speeds are reduced to a low but relatively uniform value; small increases in flow will cause breakdowns in traffic movement; and



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• LOS F is used to define forced or breakdown flow; this condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point; queues form behind such locations.

The study area intersections which are stop sign controlled with stop-control on the minor street only have been analyzed using the two-way stop-controlled unsignalized intersection analysis methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at these locations to calculate average intersection delay, the level of service has been calculated. The level of service criteria for this type of intersection analysis is based on total delay per vehicle for the worst minor street movement(s).

For all way stop (AWS) controlled intersections, the ability of vehicles to enter the intersection is not controlled by the occurrence of gaps in the flow of the main street. The AWS controlled intersections have been evaluated using the HCM methodology for this type of multiway stop controlled intersection configuration. The level of service criteria for this type of intersection analysis is based on average total delay per vehicle for the overall intersection.

The levels of service are defined in terms of average delay for the intersection analysis methodology as shown in Table 30 on page 195.

(3) Existing Traffic Operations

Existing peak hour traffic operations have been evaluated for both the weekday P.M. and weekend P.M. peak hour traffic throughout the study area. The results of this analysis are summarized in Table 30. As shown in the table, the study intersections analyzed currently operate at LOS C or better with the exception of the intersections of Lake Gregory Drive at Highway 18 during the weekday and weekend peak hours and at Daley Canyon Road and Highway 189 during the weekday peak hour.

2. THRESHOLDS OF SIGNIFICANCE

The following definitions of deficiencies and significant impacts have been developed in accordance with the County of San Bernardino requirements.

According to the County of San Bernardino General Plan, peak hour intersection operations of LOS C or better are generally acceptable. Any intersection operating at LOS D or

Table 30
EXISTING INTERSECTION CONDITIONS

	Week	day	Weeke	end
Intersection	Delay (sec) ^a	LOS	Delay (sec) a	LOS
Lake Gregory Drive and North Road	14.1	В	14.1	В
Lake Gregory Drive and Highway 189	17.0	C	17.8	C
Lake Gregory Drive and Highway 18	b	F	30.2	D
Pinecrest Road and Highway 189	10.0	A	9.9	A
North Road and Highway 189	12.0	В	10.7	В
Bear Springs Road and Highway 189	14.0	В	11.9	В
Daley Canyon Road and Highway 189	34.8	E	15.4	C
Daley Canyon Road and Highway 18	12.5	В	14.4	В
Daley Canyon Road and Highway 18 By-Pass	12.8	В	9.6	A
Highway 18 By-Pass and Highway 18	17.6	C	20.3	C

^a Delay and level of service were calculated using the Traffix, Version 7.1.0607 (1999) software. Per the 1997 HCM, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

Source: Urban Crossroads, Royal Rangers Youth Campground and Conference Center Focused Traffic Impact Analysis, revised June 4, 2003.

F will be considered deficient. Intersections under the jurisdiction of the California Department of Transportation (Caltrans) will be considered deficient if the resulting LOS is E or worse.

A traffic impact is considered significant if the project both contributes measurable traffic to and substantially and adversely changes the level of service at any off-site location projected to experience deficient operations under foreseeable cumulative conditions, where feasible improvements consistent with the County of San Bernardino General Plan cannot be constructed.

3. ENVIRONMENTAL IMPACTS

a. Methodology

Traffic conditions were evaluated for existing, opening year (2010), and long range (2020) conditions. Actual traffic count data were obtained from a variety of sources to quantify existing traffic conditions. Traffic count data were also collected by Urban Crossroads, Inc. specifically for this project. This traffic data were supplemented by information obtained from the traffic study prepared for Tentative Tract No. 15612 and Caltrans.

^(—) denotes delay is high, intersection is unstable, and LOS F.

To account for peak seasonal variations in traffic, historical average daily traffic volumes in the study area were compared with the Caltrans traffic count data source. The relationship between the peak month and the annual average daily traffic volumes ranged between an increase of 3 percent and 12 percent for the roadway segments within the study area. To ensure a conservative, "worst-case" scenario, the existing volumes were factored upward by 12 percent to account for peak season conditions.

To account for areawide growth on roadways, Year 2010 and Year 2020 traffic volumes were calculated based on applying a 1.4 percent annual growth rate of existing traffic volumes. Traffic from a cumulative project (tentative Tract No. 15612) was also added to Year 2020 conditions. Areawide growth was derived from the Traffic Volumes on California State Highways by Caltrans.

Based on the weekday P.M. peak hour volumes for the intersection of Daley Canyon Road at Highway 18, included in the Tentative Tract 15612 traffic study, adjustments were made to account for the Highway 18 By-Pass road. Weekend adjustment factors were calculated based on relationships established from counts conducted on a Friday and Sunday timeframe.

Project traffic volumes for all future conditions projections were estimated using the manual approach. Trip generation was estimated based on the arrival and departure characteristics for the project site. The individual distribution pattern for the project was developed based on the regional trip distributions, as well as the individual access points and local traffic patterns.

Project traffic volumes were then added to the future year background volumes. The result of this traffic forecasting procedure is a series of traffic volumes suitable for traffic operations analysis.

b. Project Features

The proposed project would include on-site improvements associated with site access, entry, and signage. In particular, the following project features would be implemented as part of the project:

- Align the main project access to Highway 189 opposite the existing Pinecrest Road.
- Provide a secondary project access for emergency vehicles only to Highway 189.
- Provide a westbound left turn pocket on Highway 189 at the Pinecrest Road intersection.

- Construct an eastbound right turn lane on Highway 189 at the Pinecrest Road entry.
- Implement on-site signing/striping in conjunction with detailed construction plans for the project site.
- Review sight distance at the main project access to Highway 189 with respect to standard Caltrans/County of San Bernardino sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

c. Analysis of Traffic Impacts

I-1. Intersection Operation. The proposed project would exacerbate the deficient conditions of several study intersections. This is considered a *Significant Impact*.

Trip Generation

Project traffic volumes for all future conditions projections were estimated using the manual approach. Trip generation has been estimated based on the arrival and departure characteristics for the project site. The project site could accommodate a maximum of 1,048 campers, which represent a peak number of visitors to the site with a total of 125 vehicles (10 buses and 115 vans/automobiles) anticipated to be generated. These buses and personal vehicles (vans/automobiles) can accommodate 50 and 8 passengers (on average), respectively. Based on discussions with County staff, a passenger car equivalency (PCE) factor of 2.5 has been applied to the buses. Therefore, the 10 buses are assumed to have the same impact as 25 passenger cars.

The peak arrival and departure characteristics for the project site have been used to calculate the overall quantity of traffic generated by on-site uses. Table 31 on page 198 presents the projected weekly trip generation by the proposed project. Table 32 on page 199 summarizes the peak conditions trip generation for the project site. As shown in the table, the proposed development is projected to generate approximately 193 vehicles per hour during the weekday P.M. peak hour and 179 vehicles per hour during the weekend P.M. peak hour.

Based on the trip generation, the project trip generation would not exceed the San Bernardino County Congestion Management Plan (CMP) threshold of 250 peak hour trips. Therefore, a CMP traffic study is not required for the proposed project.

Trip Distribution and Assignment

The trip distribution and assignment process represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical

	Daily	Total		108	114	52	165	100			50	15	15		41
Ý	M.	Out		100	110	50	140	100				15	15		10
Sunday	P.M.	In		∞	4	7	25 ^a	1			1				4
	A.M.	Out		1				1							
	A.	In						1							
	Daily	Total		I			I	I	I	40		I			28
ay	M.	Out								40					10
Saturday	P.M.	In		1				1			1				4
	A.M.	Out						1							4
	Ą	In									I				10
	Daily	Total		108	114	52	165	75	75	I		15	15		28
V	4.	Out		∞	4	7	25 ^a	1							10
Friday	P.M.	In		100	110	50	140	75	75			15	15		4
	A.M.	Out										-			4
	A.]	In						1							10
	Daily	Total		I			1	25	75		50	I	10		28
lay	M.	Out						1							10
Thursday	P.M.	In		1				1							4
٠	.M.	Out		1				1							4
	A.	In						-							10
	Daily	Total								40		I			78
day	M.	Out										-			10
Wednesday	P.M.	In								40					4
_	A.M.	Out						1							4
		In				I							I		10
	Daily	Total		I				I	150			I	10		28
ay	P.M.	Out		1				1							10
Monday	Ρ.	In		1				1							4
	A.M.	Out	Events	I			I	1		I			5	fic	4
	A	In	urrent										5	ut Traf,	10
		Event	Non-Concurrent Events	Southern Pow Wow	Central Pow Wow	Eastern Pow Wow	Full-Cap. Camp	FCF Camp	Family Camp	Summer Camps	Nat. Training	Camp Sectional Camps	Science Camps	Concurrent Traffic	Camp Staff

Notes: Bold numbers denote the event that would generate the peak daily total.

Source: Urban Crossroads, Royal Rangers Youth Campground and Conference Center Focused Traffic Impact Analysis, revised June 4, 2003.

^a A passenger car equivalency factor of 2.5 has been used for buses.

Table 32
PROJECT PEAK CONDITIONS TRIP GENERATION

		Weekday		Weekend			
	P.M. ^a		Daily	P.1	Daily		
Event	In	Out	Total b	In	Out	Total b	
Full Capacity Camp	140	25	165	25	140	165	
Camp Staff	4	10	28 °	4	10	14	
Total	144	35	193	29	150	179	

^a P.M. peak-hour (4 P.M. to 6 P.M.) traffic.

Source: Urban Crossroads, Royal Rangers Youth Campground and Conference Center Focused Traffic Impact Analysis, revised June 4, 2003.

location of the site, the location of residential, commercial, employment and recreational opportunities and the proximity to the regional freeway system. The individual distribution pattern for the project has been developed based on the regional trip distribution, as well as the individual access points and local traffic patterns. The project traffic distribution is shown in Figure 23 on page 200.

Project traffic volumes were then added to the future year background volumes. It should also be noted that a peak season factor has been added to reflect the most conservative, "worst-case" scenario. The result of this traffic forecasting procedure is a series of traffic volumes suitable for traffic operations analysis.

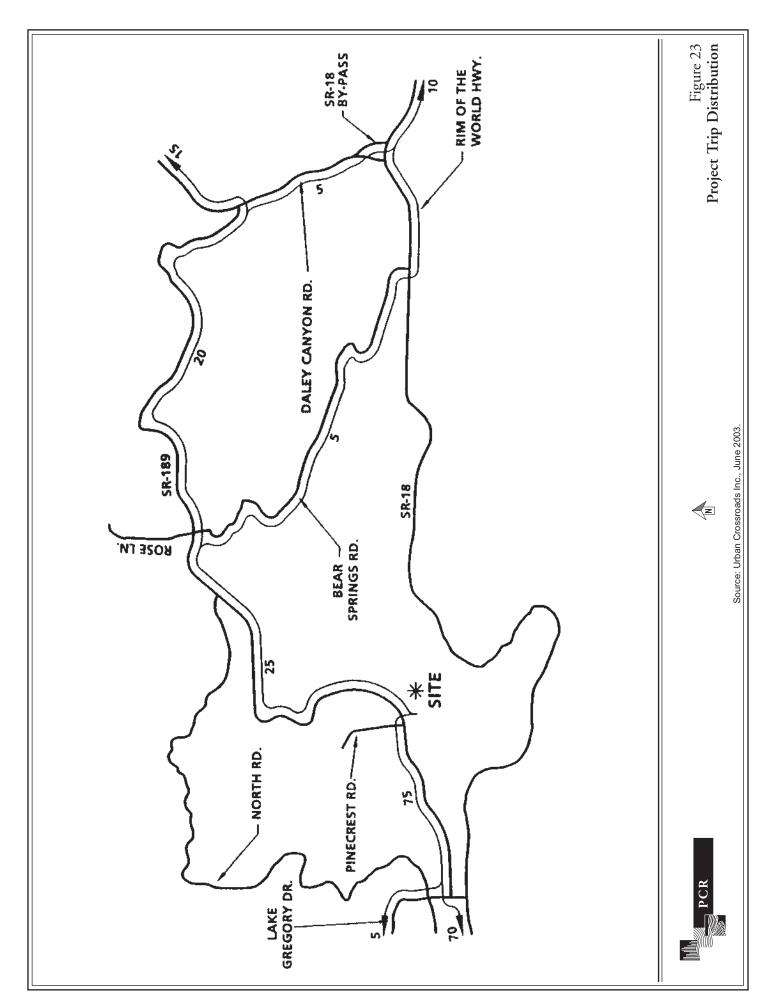
Future Year Traffic Operations

(1) Year 2010 Conditions

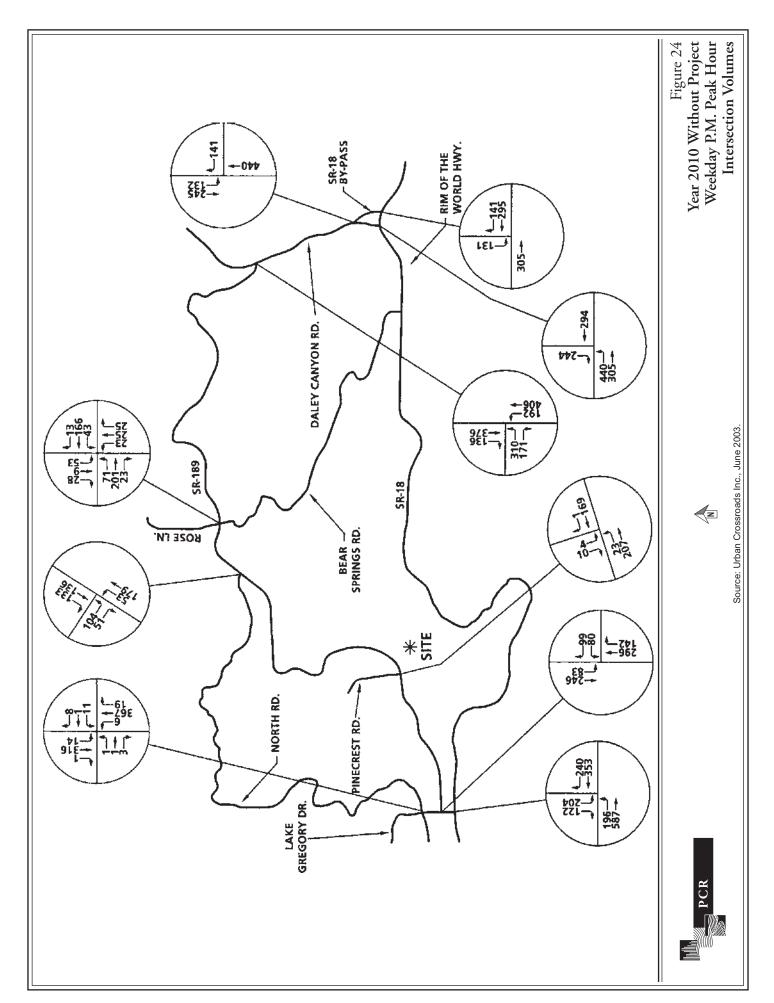
"Year 2010 without Project" traffic volumes were determined based on the application of a 1.4 percent annual growth rate. Weekday P.M. and weekend P.M. peak hour intersection turning movement volumes are shown in Figure 24 on page 201 and Figure 25 on page 202, respectively. The intersection operations analysis for 2010 without project traffic conditions is summarized in Table 33 on page 204. As shown in the table, the study intersections of Lake Gregory Drive at Highway 18 and Daley Canyon Road at Highway 189 are projected to experience LOS D to LOS F operations during the peak hours and are, therefore, deficient per the County of San Bernardino/Caltrans criteria.

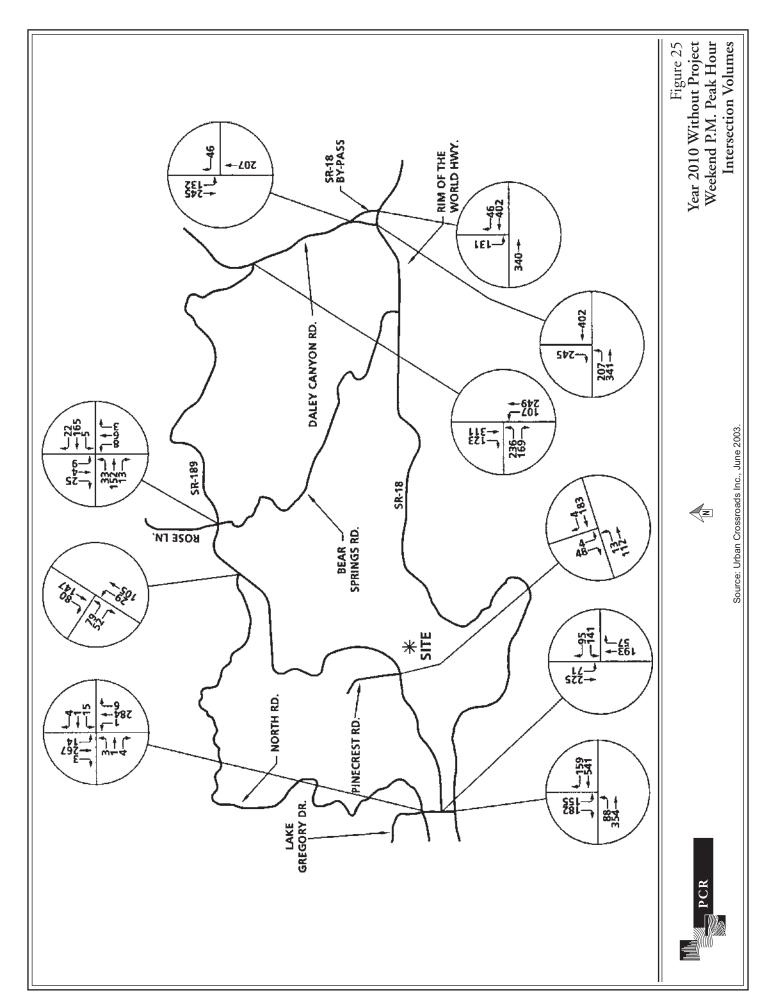
b Total number of traffic for the day.

^c Other traffic activity occurs during non-P.M. peak hour.



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The intersection operations analysis for Year 2010 with project traffic conditions is summarized in Table 33 on page 204. Year 2010 with project weekday P.M and weekend P.M peak hour intersection turning movement volumes are shown in Figure 26 and Figure 27 on pages 205 and 206, respectively. As shown in Table 33, the following study area intersections are projected to experience LOS D to LOS F (or LOS E to LOS F if under the jurisdiction of Caltrans) during peak hours and are, therefore, deficient per the County of San Bernardino/Caltrans criteria:

- Lake Gregory Drive at Highway 189;
- Lake Gregory Drive at Highway 18; and
- Daley Canyon Road at Highway 189.

(2) Year 2020 Conditions

Year 2020 traffic volumes were based on a 1.4 percent annual growth rate in addition to a single cumulative project (Tentative Tract No. 15612) identified by County staff that is located east of Grass Valley Road and north of Highway 189. This proposed cumulative development included 170 single-family units and 40 town homes. The traffic study prepared for this cumulative project indicated that approximately 205 trips (129 in/76 out) during the P.M. peak hour would be generated. The trip distribution pattern is illustrated in Figure 28 on page 207.

Year 2020 without project weekday P.M. and weekend P.M. peak hour intersection turning movement volumes are shown in Figure 29 and Figure 30 on pages 208 and 209, respectively. The intersection operations analysis for Year 2020 without project traffic conditions is summarized in Table 33. As shown in the table, four of the 10 study intersections are projected to experience LOS D to LOS F operations during the peak hours and are, therefore, deficient per the County of San Bernardino/Caltrans (intersections under the jurisdiction of Caltrans require LOS D or better operations) criteria. These four intersections are as follows:

- Lake Gregory Drive at Highway 189;
- Lake Gregory Drive at Highway 18;
- Daley Canyon Road at Highway 189; and
- Highway 18 By-Pass at Highway 18.

Table 33

YEAR 2010 AND 2020 WITHOUT AND WITH PROJECT CONDITIONS INTERSECTION ANALYSES

	20	10 With	out Project	t	2010 With Project			
	Week	day	Week	Weekend		kday	Weel	kend
	Delay a		Delay a		Delay a		Delay a	
Intersection	(sec)	LOS	(sec)	LOS	(sec)	LOS	(sec)	LOS
Lake Gregory Dr. & North Rd.	15.6	С	15.5	С	15.7	С	15.6	C
Lake Gregory Dr. & Highway 189	21.2	C	23.1	C	31.2	D	72.6	F
Lake Gregory Dr. & Highway 189 (w/ imp.) b	N/A	N/A	N/A	N/A	7.9	A	12.2	В
Lake Gregory Dr. & Highway 18	c	F	60.2	F	c	F	c	F
Lake Gregory Dr. & Highway 18 (w/ imp.) b	N/A	N/A	N/A	N/A	8.1	A	10.1	В
Pinecrest Rd. & Highway 189 d	10.3	В	10.2	В	14.6	В	15.1	C
Pinecrest Rd. & Highway 189 (w/ imp.) e	N/A	N/A	N/A	N/A	13.8	В	14.9	В
North Rd. & Highway 189	12.9	В	11.2	В	13.6	В	11.5	В
Bear Springs Rd. & Highway 189	15.6	C	12.6	В	17.1	C	13.2	В
Daley Canyon Rd. & Highway 189	c	F	22.4	D	c	F	26.3	D
Daley Canyon Rd. & Highway 189 (w/ imp.) b	N/A	N/A	N/A	N/A	14.8	В	12.7	В
Daley Canyon Rd. & Highway 18	13.7	В	16.6	C	13.8	В	16.6	C
Daley Canyon Rd. & Highway 18 By-Pass	14.0	В	9.8	A	14.2	В	9.8	A
Highway 18 By-Pass & Highway 18	21.1	C	25.9	D	21.9	C	27.6	D
Highway 18 By-Pass & Highway 18 (w/ imp.) b	N/A	N/A	N/A	N/A	6.5	A	6.5	A
	20	2020 Without Project				2020 Wi	th Project	

		120 WILLI	out i rojec	ι	2020 With 1 Toject				
	Weekday		Weekend		Weekday		Weekend		
	Delay a		Delay a		Delay a		Delay a	_	
Intersection	(sec)	LOS	(sec)	LOS	(sec)	LOS	(sec)	LOS	
Lake Gregory Dr. & North Rd.	18.9	С	18.7	С	19.2	С	18.9	С	
Lake Gregory Dr. & Highway 189	31.7	D	38.9	E	58.8	F	c	F	
Lake Gregory Dr. & Highway 189 (w/ imp.) b	N/A	N/A	N/A	N/A	8.5	A	12.8	В	
Lake Gregory Dr. & Highway 18	c	F	c	F	c	F	c	F	
Lake Gregory Dr. & Highway 18 (w/ imp.) b	N/A	N/A	N/A	N/A	9.0	A	11.5	В	
Pinecrest Rd. & Highway 189 d	10.7	В	10.7	В	15.9	C	17.0	C	
Pinecrest Rd. & Highway 189 (w/ imp.) e	N/A	N/A	N/A	N/A	15.0	В	16.7	C	
North Rd. & Highway 189	14.7	В	12.0	В	15.7	C	12.5	В	
Bear Springs Rd. & Highway 189	18.7	C	13.7	В	21.0	C	14.4	В	
Daley Canyon Rd. & Highway 189	c	F	c	F	c	F	c	F	
Daley Canyon Rd. & Highway 189 (w/ imp.) b	N/A	N/A	N/A	N/A	25.8	C	13.0	В	
Daley Canyon Rd. & Highway 18	18.9	C	28.4	D	19.3	C	28.6	D	
Daley Canyon Rd. & Highway 18 By-Pass	20.6	C	10.6	В	21.1	C	10.6	В	
Highway 18 By-Pass & Highway 18	31.9	D	44.6	E	33.5	D	50.2	F	
Highway 18 By-Pass & Highway 18 (w/ imp.) b	N/A	N/A	N/A	N/A	7.0	A	7.0	A	

Delay and level of service were calculated using the Traffix, Version 7.1.0607 (1999) software. Per the 1997 HCM, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

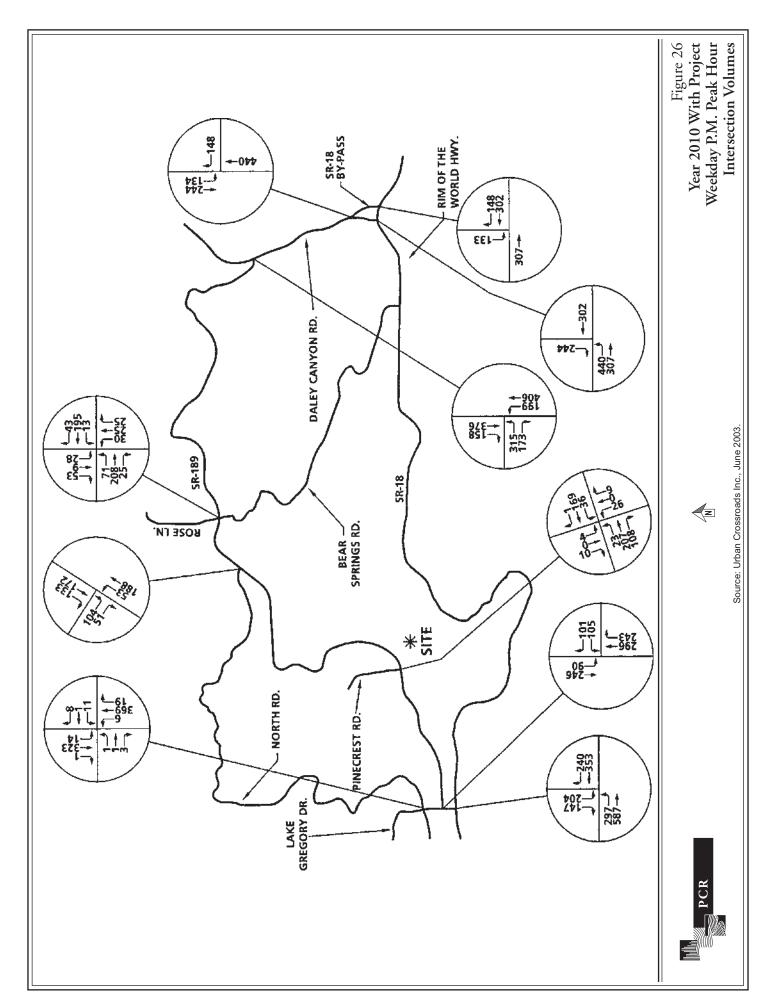
Source: Urban Crossroads, Royal Rangers Youth Campground and Conference Center Focused Traffic Impact Analysis, revised June 4, 2003.

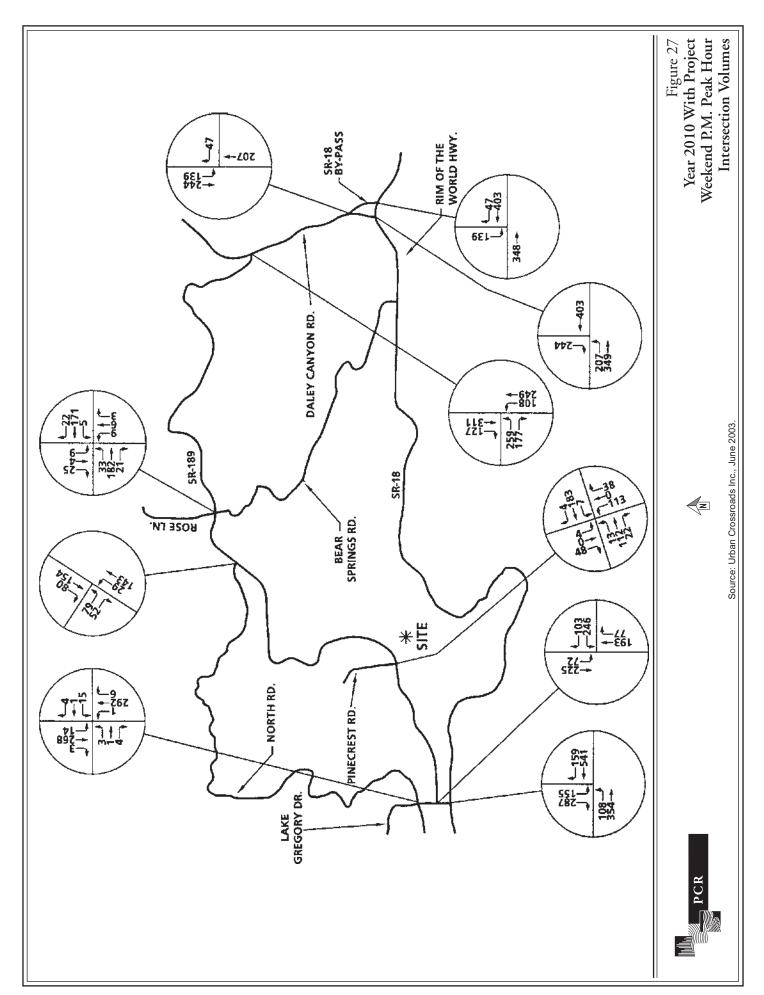
b Intersection improvement includes a traffic signal installed at this intersection.

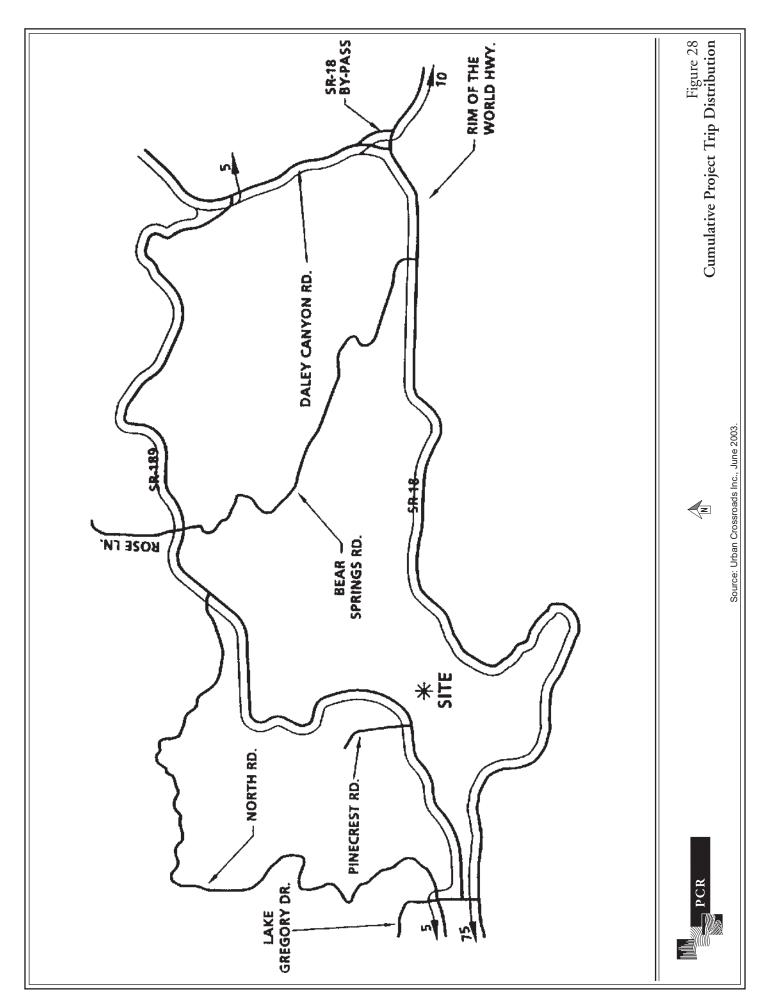
^c (—) denotes delay is high, intersection is unstable, and LOS F.

^d A northbound through lane would be added as part of the proposed project.

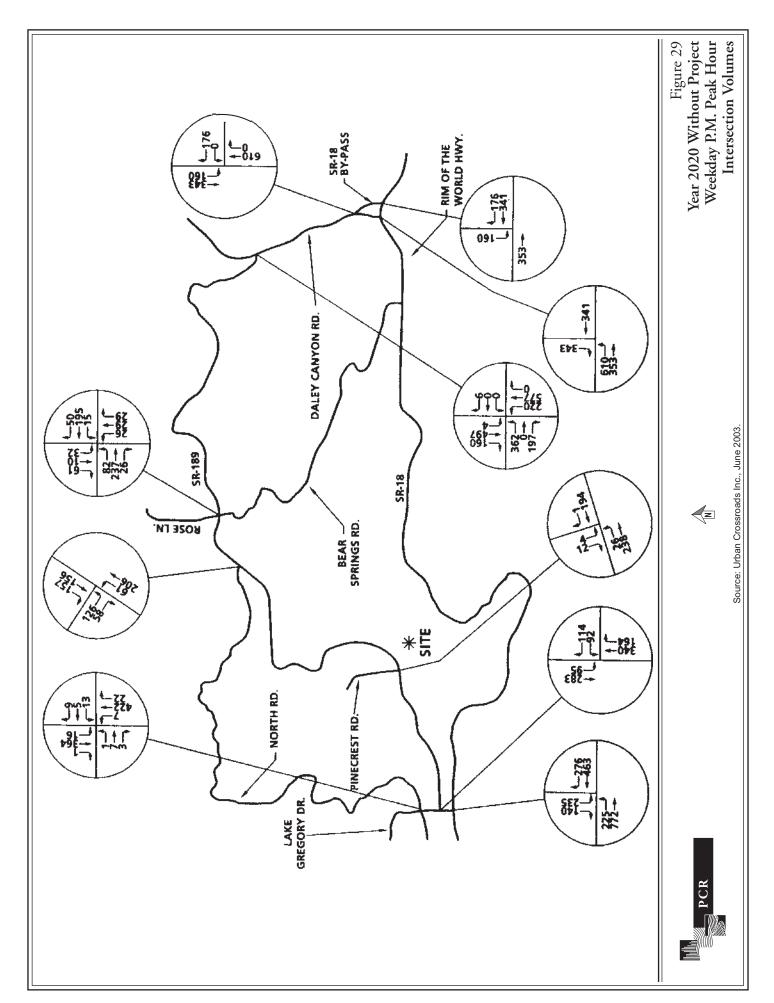
^e Intersection improvement includes the addition of an eastbound right-turn lane at this intersection.

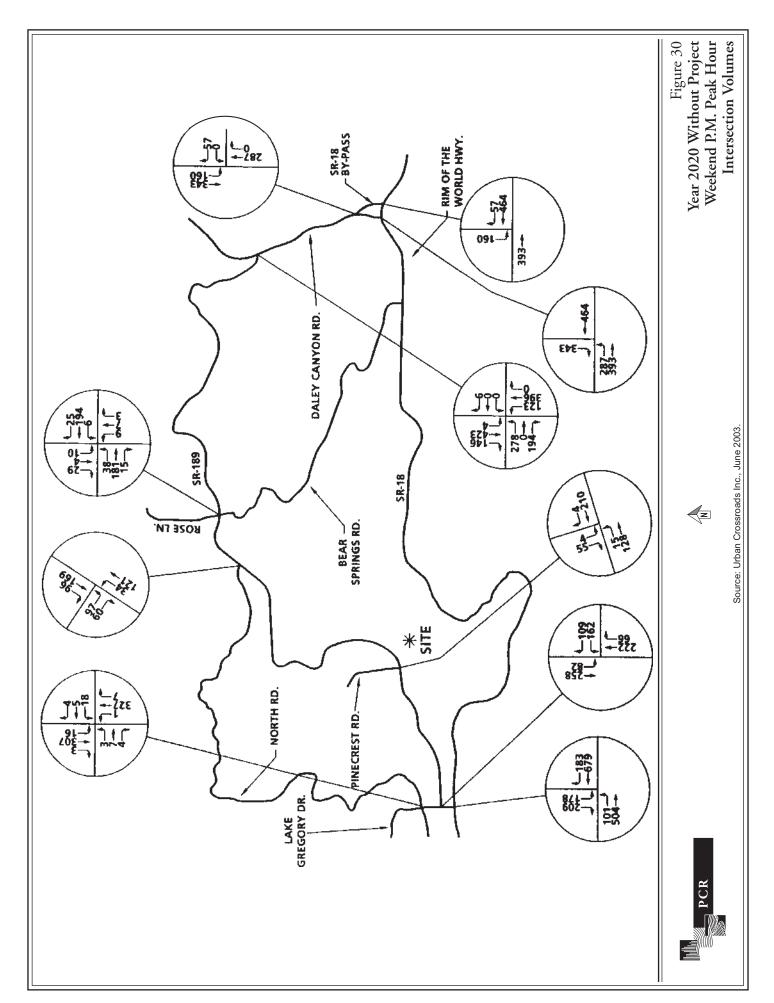






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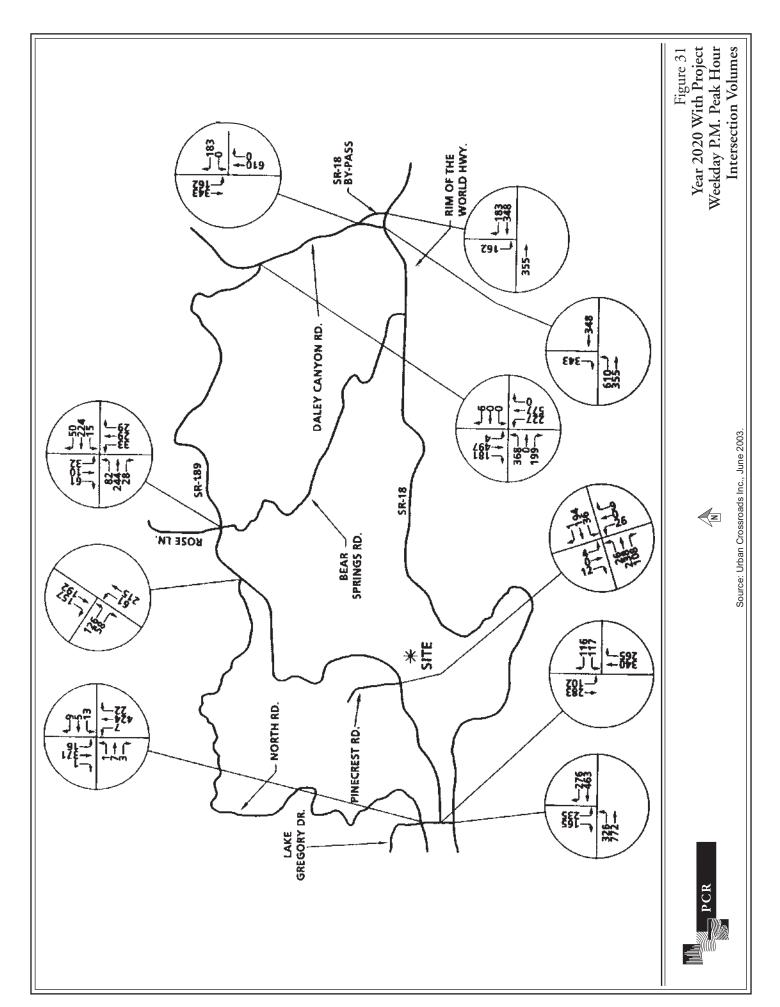
- The intersection operations analysis for Year 2020 with project traffic conditions is summarized in Table 33 on page 204. Year 2020 with project weekday P.M and weekend P.M peak hour intersection turning movement volumes are shown on Figure 31 and Figure 32 on pages 211 and 212, respectively. As shown in the table, the following study area intersections are projected to experience LOS D to LOS F during peak hours without improvements and are, therefore, deficient per the County of San Bernardino/Caltrans (intersections under the jurisdiction of Caltrans require LOS D or better operations) criteria:
- Lake Gregory Drive at Highway 189;
- Lake Gregory Drive at Highway 18; Daley Canyon Road at Highway 189; and
- Highway 18 By-Pass at Highway 18.

4. CUMULATIVE IMPACTS

Cumulative effects of ambient growth and traffic from a single cumulative project (Tentative Tract No. 15612 located east of Grass Valley Road and north of Highway 189) have been incorporated into the analysis discussed above. As indicated in Table 33 on page 204, future operation of four of the 10 study area intersections are projected to be LOS D or worse during either or both the weekday P.M. peak period and the weekend P.M. peak period without the proposed project. The proposed project would exacerbate the deficiency of these intersections per the County of San Bernardino/Caltrans criteria and would contribute to a significant impact.

5. MITIGATION MEASURES

MM-I1 Traffic signals shall be installed at the four study area intersections that were determined to be deficient per the County of San Bernardino/Caltrans criteria. In order to implement this mitigation measure, the project shall contribute towards the cost on a fair-share or "pro-rata" basis. Table 34 on page 213 presents the estimated project fair-share cost of intersection improvements (i.e., traffic signal installation).



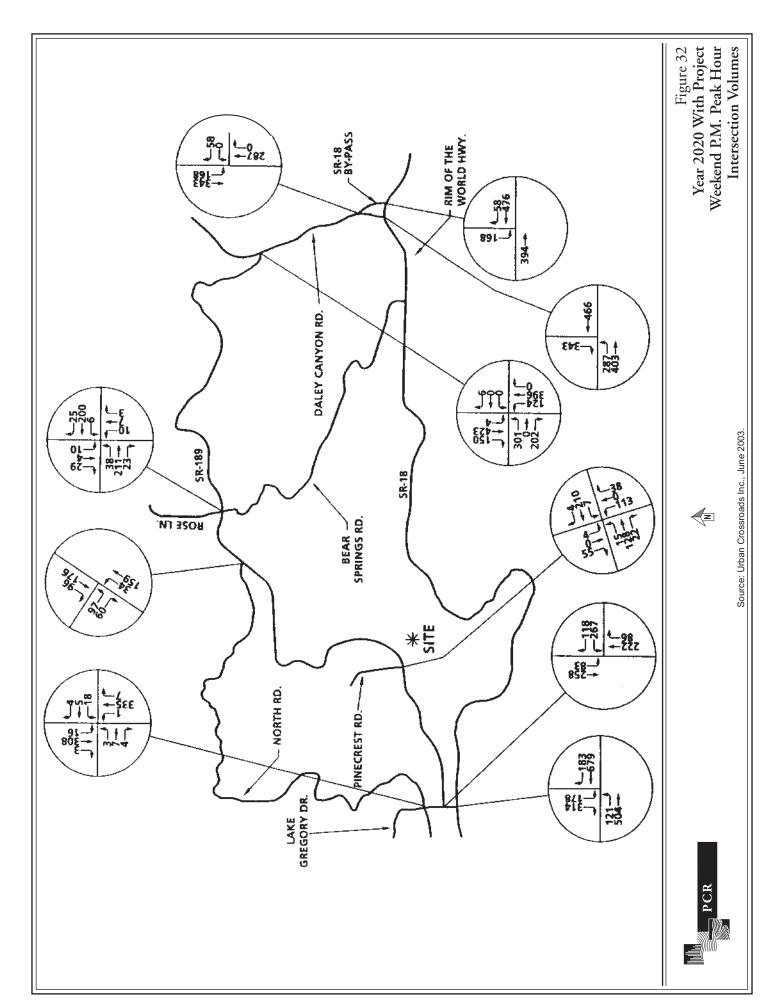


Table 34

PROJECT FAIR-SHARE OF INTERSECTION IMPROVEMENTS ^a

Intersection	Improvement Cost	Peak Hour	Project Traffic	Existing Traffic	Future w/ Proj. Traffic	Future New Traffic	Proj. % of New Traffic	Project Fair- Share Cost
Year 2010								
Lake Gregory Drive at Highway 18	\$250,000	Weekday Weekend	135 134	834 689	1,081 916	247 227	54.7 59.0	\$147,577
Lake Gregory Drive at Highway 18	\$250,000	Weekday Weekend	126 125	1,500 1,303	1,828 1,604	328 301	38.4 41.5	\$103,821
Daley Canyon Road at Highway 189	\$250,000	Weekday Weekend	36 36	1,403 1,054	1,627 1,231	224 177	16.1 20.3	\$50,847
Highway 18 By-Pass at Highway 18	\$250,000	Weekday Weekend	18 18	772 814	890 937	118 123	15.3 14.6	\$38,136
Total Year 2010								\$340,381
Year 2020								
Lake Gregory Drive at Highway 18	\$250,000	Weekday Weekend	135 134	834 689	1,223 1,034	389 345	34.7 38.8	\$97,101
Lake Gregory Drive at Highway 18	\$250,000	Weekday Weekend	126 125	1,500 1,.303	2,237 1,979	737 676	17.1 18.5	\$46,228
Daley Canyon Road at Highway 189	\$250,000	Weekday Weekend	36 36	1,403 1,054	2,059 1,606	656 552	5.5 6.5	\$16,304
Highway 18 By-Pass at Highway 18	\$250,000	Weekday Weekend	18 18	772 814	1,048 1,096	276 282	6.5 6.4	\$16,304
Total Year 2020								\$175,938

Note: The approximate costs for the improvements have generally been estimated using cost guidelines in the 1997 Congestion Management Program (CMP) Handbook. A unit cost of \$250,000 for installation of a traffic signal was substituted for the somewhat lower value cited in the CMP materials. The project fair-share contribution was estimated for both Year 2010 and Year 2020 conditions. The difference in the fair-share contribution amounts is due to the additional ambient growth between Year 2010 and Year 2020. Typically, the project would be responsible for the fair-share cost determined from utilizing the long-range horizon (Year 2020) values per the CMP

Source: Urban Crossroads, Royal Rangers Youth Campground and Conference Center Focused Traffic Impact Analysis, revised June 4, 2003.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The County of San Bernardino General Plan and Circulation Element have been adopted in accordance with CEQA requirements. As long as the project contributes its "fair-share" funding for roadway improvements within the County of San Bernardino that are consistent with the General Plan and Circulation Element, significant impacts on intersections determined to be deficient would be reduced to less-than-significant levels. Accordingly, project-related impacts and cumulative impacts on study area intersections would be less than significant after mitigation.

^a Intersection improvements consist of traffic signal installation.

4.0 ALTERNATIVES ANALYSIS

Under CEQA, the identification and analysis of alternatives to a project is a fundamental aspect of the environmental review process. CEQA Guidelines § 21002.1(a) establishes the need to address alternatives in an EIR by stating that in addition to determining a project's significant environmental impacts and indicating potential means of mitigating or avoiding those impacts, "the purpose of an environmental impact report is . . . to identify alternatives to the project."

Direction regarding the definition of project alternatives is provided in the CEQA Guidelines as follows:

"An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

CEQA Guidelines emphasize that the selection of project alternatives be based primarily on the ability to reduce impacts relative to the proposed project, "even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." The Guidelines further direct that the range of alternatives be guided by a "rule of reason," such that only those alternatives necessary to permit a reasoned choice are addressed.

In selecting project alternatives for analysis, potential alternatives must pass a test of feasibility. CEQA Guidelines § 15126.6(f)(1) states that:

"Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site"

Beyond these factors, CEQA Guidelines require the analysis of a "no project" alternative and an evaluation of alternative location(s) for the project, if feasible. Based on the alternatives analysis, an environmentally superior alternative is to be designated. If the environmentally superior alternative is the No Project Alternative, then the EIR shall identify an environmentally superior alternative among the other alternatives.

For each of the alternatives, the analysis includes the following:

- a description of the alternative;
- a discussion of the impacts of the alternative and evaluation of the significance of those impacts; and
- an evaluation of the alternative relative to the proposed project, specifically addressing project objectives, feasibility, the elimination or reduction of impacts, and comparative merits.

The following alternatives were selected and are discussed in this Chapter:

- No Project Alternative;
- Reduced Capacity Alternative; and
- Alternative Site Design.

In addition, CEQA Guidelines § 15126.6(c) requires that an EIR identify any alternatives that were considered for analysis but rejected as infeasible and discuss the reasons for their rejection. Of the various alternatives available for evaluation, the process of selecting project alternatives to be analyzed in this Draft EIR commenced with identification of the significant effects associated with the proposed project and a review of the basic objectives established for the project. CEQA Guidelines § 15126.6(f)(2) also requires that an alternative location for the project be identified. However, in those cases in which it is determined that no feasible alternative locations exist, the Lead Agency must disclose the reasons for this conclusion and include these reasons in the EIR.

Alternatives that have been rejected as infeasible include Alternative Site locations that are not in a mountain setting since they would not fulfill the purpose or meet the project objective of providing for mountain camping experience for Royal Ranger groups. In addition, the project site has been deeded by the Assemblies of God to the Royal Rangers organization. Consequently, it would not be feasible for the Royal Rangers to acquire, control or otherwise pursue access to alternative site locations.

A. ALTERNATIVE 1: NO PROJECT ALTERNATIVE

a. Description

The No Project Alternative assumes that no discretionary actions, which are subject to CEQA review, would occur within the project site. Under this alternative, two scenarios are evaluated, one assumes no development with the project site remaining as forested land, and the other assumes that residential uses would be developed consistent with the site's Planned Residential Development RS-14M designation. This second scenario is in accordance with CEQA Guidelines Section 15126.6(e)(3)(B), which states that the No Project Alternative may discuss "predictable actions by others, such as some other project if disapproval of the project under consideration were to occur." CEQA Guidelines Section 15126.6(e)(3)(C) further states that the No Project Alternative should project "what would reasonably be expected to occur in the foreseeable future if the project were not approved based on current plans and consistent with available infrastructure and community services." More specifically, should development occur, only those ministerial activities allowable under existing land use policies would be anticipated.

The Planned Residential Development, RS-14M designation of the project site permits a density of one dwelling unit per 14,000 square feet. This would allow for a theoretical density of 155 dwelling units on the site. However, other requirements, such as reserving 40 percent of the site as open space, and the natural constraints of the site are expected to restrict the total number of dwelling units that would be feasible. As a result, the assumptions for a potential residential development are based on a 1992 Planned Residential Development with 60 units that was proposed for the site and reviewed by the County. Though the plan was abandoned due to poor economic conditions at the time, it is viewed as feasible for purposes of analyzing a reasonably foreseeable project that could result if the proposed project were not approved.

b. Impact Analysis

Aesthetics

Assuming the No Project Alternative does not involve new development, the project site would remain vegetated with a coniferous forest, consisting of Ponderosa pine, sugar pine, California black oak, white fir, and incense cedar trees. This alternative would not obstruct any scenic vista or views open to the public, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the site. Since no impacts related to aesthetics would occur, aesthetic impacts would be less than the impacts of the proposed project.

However, should development of uses that are allowable under existing land use policies (i.e., Planned Residential Development) occur, aesthetics impacts may result. The development

pattern formed by 60 dwelling units would be markedly different than that of the proposed project. Though the Planned Residential Development would not feature structures as large as the fort building or the amphitheaters, it would feature more buildings on the project site. The development would also maintain a minimum of 40 percent of the site as open space. The resulting visual character of the site would likely be similar to the visual character of nearby residential areas with smaller scale and more dispersed development. The aesthetic impacts of this alternative are not considered to be significant. This contrasts with the proposed project where aesthetic impacts are considered significant and unavoidable.

Air Quality

Under the assumption that the project site would not be developed, no project construction or operation-related emissions, such as fugitive dust, construction equipment emissions, and project-related vehicle emissions would occur, and, as such, there would be no air quality impacts. Air quality impacts would be less under this alternative than those identified for the proposed project.

As described above, should development of uses that are allowable under existing land use policies (i.e., Planned Residential Development) occur, residential development would likely be developed over nearly the entire project site whereas the project would result in the disturbance of 66 percent of the project site. Thus, this alternative would result in an increase in the number of heavy-duty construction equipment, an increase in total earthwork (i.e., grading). As with the proposed project, emissions would likely be significant for ROC and NO_x. However, the construction emissions generated by this alternative would not likely be reduced below the SCAQMD threshold levels and would result in short-term significant and unavoidable impacts for ROC and NO_x. As such, construction impacts on air quality would be greater under this alternative than those identified for the proposed project for which construction impacts would be mitigated to less-than-significant levels.

The No Project Alternative would also generate long-term operational mobile source emissions and stationary source regional emissions. According to CARB's Urbemis 2001 Emissions Inventory Model, the Planned Residential Development with 60 single-family dwelling units would generate 648 average daily trips compared to 163 daily trips generated by the proposed project. While this represents more daily trips than the proposed project, mobile emissions for this alternative would be less than half of project emissions for all criteria pollutants except PM₁₀, which would increase from less than one pound per day to approximately seven pounds per day. Mobile PM₁₀ emissions would still be well within the SCAQMD significance threshold level. Mobile emissions of CO, NO_x, ROC, and SO_x would be less than the proposed project as a result of a lower emitting fleet mix (i.e. no buses and fewer vans) and shorter trip distances. In addition, as with the proposed project, localized mobile source CO emissions generated by this alternative would result in a less-than-significant impact.

Under this alternative, emissions from stationary sources would not include CO and ROC emissions associated with project campfire/cookstove uses but would likely include wood burning fireplaces for the single-family residences. Assuming one hundred percent of the alternative residences would have fireplaces greatly increases the amount of operational CO, ROC, and PM_{10} emissions. As presented in Table 35 on page 219, regional operation emissions for the No Project Alternative compared to the project would be substantially higher for CO, PM_{10} , and ROC, substantially lower for NO_x , and approximately the same for SO_x .

In summary, the No Project Alternative may result in significant unavoidable adverse impacts related to air quality during construction (i.e., exceedance of the thresholds for ROC and NO_x) and during operation (i.e., exceedance of the thresholds for CO and ROC) should residential uses that are allowable under existing land use policies be developed on-site. As such, impacts to air quality, particularly to CO and ROC concentrations, would be greater under this alternative than those identified for the proposed project.

Biological Resources

Under the assumption that the project site would not be developed, no construction activities would occur on-site. As such, there would be no impacts to plant communities or species, wildlife, wildlife movement, or sensitive biological resources, including the two southern rubber boa habitats identified on the project site. Therefore, impacts to biological resources would not occur. This contrasts with the proposed project where impacts on southern rubber boa habitat would be significant and cumulative significant and unavoidable.

However, should residential uses that are allowable under existing land use policies be developed on-site, the No Project Alternative would involve disturbance of the site for the clearing, grading and construction of 60 dwelling units. As such, while the precise layout of the residences cannot be predicted, this alternative would have similar biological impacts to the proposed project.

Geology and Soils

Under the primary assumption that the project site would not be developed, site preparation activities, including grading and excavation and cut and fill operations, would not occur. As such, the project would not destroy, modify, or cover distinct or prominent geologic or topographic features, and no impacts associated with landform alteration would occur. Therefore, geology and soils impacts would be less under this alternative than those identified for the proposed project.

Table 35

NO PROJECT ALTERNATIVE (ALLOWABLE RESIDENTIAL DEVELOPMENT)

VERSUS PROPOSED PROJECT

PEAK DAY OPERATIONAL EMISSIONS

(Pounds per Day) ^a

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Proposed Project					
Mobile Sources ^b					
Autos/Vans and Buses	86	9	<1	8	<1
Buses	34	27	<1	4	<1
Stationary Sources ^c					
Natural Gas	<1	1	0	<1	0
Electricity	<1	4	<1	0	<1
Campfires/Cook Stoves	156	5	19	27	<1
Total	277	46	20	39	1
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	(273)	(9)	(130)	(16)	(149)
No Project/Planned Residential Developme	ent Alternative	a			
Mobile Sources					
Vehicles	50	6	7	6	<1
Stationary Sources d					
Natural Gas	<1	1	<1	<1	0
Electricity	<1	1	<1	<1	<1
Residential Fireplaces	741	8	102	672	1
Total	792	16	109	678	1
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	241	(39)	(41)	623	(149)

^a Numbers may not add correctly due to rounding.

However, should residential uses that are allowable under existing land use policies be developed on-site, the No Project Alternative would involve disturbance of the site for the clearing, grading and construction of 60 dwelling units. While the specific layout of the Planned Residential Development cannot be precisely predicted, development of 60 single-family residences would involve cut and fill activities throughout the project site. This alternative would result in exposure of people on-site to a degree of seismic hazard risks similar to that of the project and to developments throughout southern California. As with the proposed project, this Alternative would be constructed in accordance with UBC and County Development Code requirements and include retaining walls, berms, or other features to mitigate potential seismic

^b Mobile emissions source: PCR Services, June 2003

^c Stationary emission source: Synectecology, February 2003.

^d Stationary emissions source: PCR Services, June 2003

hazards and potential erosion. Thus, potential impacts associated with seismic hazards under this alternative would be less than significant and would be similar to the proposed project.

Hazards and Hazardous Materials

Under the primary assumption that the project site would not be developed, no soil disturbing construction activities would occur, and there would be no new risk of hazardous materials exposure or release. Therefore, there would be no impacts related to hazards or hazardous materials and, thus, would be less than those identified for the proposed project.

However, should residential uses that are allowable under existing land use policies be developed on-site, this alternative would potentially involve the use and storage of small quantities of potentially hazardous materials in the form of cleaning solvents or pesticides commonly used in private residences. The alternative would also face the same fire hazard due to the location of the site within the Crest Forest Fire Protection District. With respect to both sources of potential hazards, adherence to the existing regulatory requirements and normal handling practices would result in less-than-significant impacts. Without the hazards and hazardous materials associated with the use of the gun range, this alternative would result in less impacts than the proposed project.

Hydrology, Water Quality, and Water Supply

Under the primary assumption that the project site would not be developed, potential impacts related to hydrology, groundwater quality and water supply would not occur. Sedimentation and erosion impacts from construction and operation would be avoided. Surface water runoff quantity and quality would remain at existing levels. In addition, since the proposed project would not be developed, no demand for potable water would be generated. Therefore, impacts related to hydrology, water quality and water supply would be less under this alternative than those identified for the proposed project.

However, should residential uses that are allowable under existing land use policies be developed on-site, the Planned Residential Development would likely involve construction activities that would disturb a larger portion of the project site as compared to the project in order to accommodate 60 new residences. Existing runoff rates and the amount of surface water runoff would increase somewhat under this alternative as compared to the proposed project due to the corresponding increase in the amount of impervious surfaces generated by the residential development. However, this increase would not be substantial enough to cause flooding, substantially increase the amount of surface water in a water body, or result in a permanent, adverse change to the movement of surface water. While impacts associated with hydrology would be less than significant, they would be somewhat greater than the impacts that would

occur under the proposed project. However, similar to the proposed project, compliance with the County's erosion control requirements and NPDES requirements during construction would ensure that these impacts would be less than significant.

Land Use

Under the primary assumption that the project site would not be developed, the project site would remain in its existing condition as forested land. As there would be no change in land use, there would be no land use impacts or conflicts with land use policies. Therefore, impacts related to land use issues would be less under this alternative than those identified for the proposed project.

However, should residential uses that are allowable under existing land use policies be developed on-site, the Planned Residential Development would be designed to conform to the policies and regulations of the San Bernardino County Plan and the San Bernardino Development Code. Though the land use designation of the General Plan would permit a density of 3.0 units per acre, other constraints, such as slopes and open space requirements, would restrict development at a lower density level. For this alternative, a density of 1.2 units per acre is considered a feasible alternative. Not only does this density level represent that of the 1992 proposal for the site, but it is generally consistent with other residential development in the surrounding area and would create a similar land use pattern to the nearby residential areas such as Crestline, Twin Peaks, and Rim Forest. As such, no conflicts with plans or land use impacts are anticipated as a result of this alternative. This contrasts with the proposed project, which would result in incompatible land use due to cumulative noise impacts.

Noise

Under the assumption that the project site would not be developed, construction and development of the proposed project would not occur. Noise generated by project construction (e.g., excavation, grading, and use of construction equipment) and operation (e.g., use of the gun range, amphitheaters, swimming pools) would be avoided. Therefore, noise impact would be less under this alternative than those identified for the proposed project.

However, should residential uses that are allowable under existing land use policies be developed on-site, worst-case construction-period noise impacts would remain similar to impacts identified for the proposed project. The same equipment mix would be used for construction (e.g., graders, pavers, electrified and pneumatic power tools, etc.), but the duration of construction activities (and related noise impacts) would likely be less for this alternative than for the proposed project.

Long-term noise impacts to areas immediately surrounding the project site associated with project operations would be less than those identified for the proposed project because the significant impacts associated with the proposed gun range would not occur. Other recreational noise sources resulting from the proposed project, such as the two amphitheaters and outdoor swimming pools, would not be built. Rather, neighborhood noise sources, such as traffic circulation, domestic pets, lawn maintenance activities, etc., would be located on the project site. Impacts to areas surrounding the project site from such neighborhood noise sources would likely be less than the impacts from recreational noise sources that would occur from development of the proposed project.

As with the proposed project, roadway noise along Highway 189 would increase with the No Project Alternative. Although this alternative is expected to generate 648 daily vehicle trips, which would be 485 trips greater than the proposed project, the typical residential vehicle fleet mix (i.e., automobiles) would result in approximately the same noise levels as the proposed project along Highway 189. The proposed project is anticipated to generate approximately 163 daily trips, of which 20 would be bus trips. According to Caltrans, for noise purposes, the passenger car equivalency (PCE) of one bus, which is assumed to be equivalent to one heavy-duty truck, is approximately 31 passenger cars. Using this conversion factor, the proposed project would result in the PCE of 763 daily trips, which would be slightly (115 cars) more than the passenger car trips generated by this alternative.

Therefore, similar to the proposed project, noise levels along Highway 189 (between Lake Gregory Road and Pinecrest Road) are estimated to increase by a maximum of 0.2 dBA CNEL, which is less than audible and well under the 5-dBA threshold of significance for areas that are not "noise impacted".

Transportation and Circulation

Under the primary assumption that the project site would not be developed, construction and development of the proposed project would not occur. Traffic generated by project construction (e.g., construction workers, haul trucks, and delivery trucks) and operation (e.g., buses, vans, automobiles) would be avoided. This alternative would not exacerbate the deficient conditions of several study area intersections and would not require contribution to fair-share funding for roadway improvements. Therefore, traffic impact would be less under this alternative than those identified for the proposed project.

⁶⁸ Caltrans, Traffic Noise Analysis Protocol for New Highway Construction and Highway Reconstruction Projects, October 1998.

However, should residential uses that are allowable under existing land use policies be developed on-site, the likely configuration of the Planned Residential Development would feature an internal road system connecting to Highway 189 at the same point as the main entrance for the proposed project. As estimated in the Air Quality discussion above, the No Project Alternative with residential development would generate 648 average daily trips, which result in 485 more trips than the proposed project. As traffic generated by the proposed project would result in a significant impact on study area intersections, the addition of more trips to the roadway system would likely exacerbate the deficient conditions at those intersections and to a greater extent than the proposed project. However, as with the proposed project, contribution to "fair-share" funding for roadway improvements within the County of San Bernardino that are consistent with the General Plan and Circulation Element would reduce impacts to local intersections to less-than-significant levels.

c. Conclusion and Relationship of the Alternative to Project Objectives

Although the No Project Alternative with no development on the project site would not result in any significant environmental impacts, it would not achieve any of the project objectives. Similarly, should residential uses that are allowable under existing land use policies be developed on-site, this development would not achieve any of the project objectives. Specifically, the No Project Alternative would not provide a secure location for an outdoor/mountain camping experience for Royal Ranger groups and a location that includes activity areas and amenities at the campground for learning, training, and spiritual and physical development of young boys to young men.

B. ALTERNATIVE 2: REDUCED PROJECT ALTERNATIVE

1. Description

The Reduced Project Alternative would involve a reduction in the size of some of the larger components of the project, including the fort building, the amphitheaters, the pools, tent camp sites, and associated parking. Table 36 on page 224 presents the components of the project that would be reduced by approximately 40 percent. In addition, the gun range is proposed to be fully enclosed under this alternative.

The primary purpose of this alternative is to reduce the massing created by the project and the magnitude of its environmental effects. This alternative would reduce the extent of site disturbance by approximately 5.5 acres due to a reduction in tent camp sites, pool size/capacity, and parking areas. Because the tent camp sites would not require any tree removal, the extent of tree removal would be reduced by approximately 5.2 acres as a result of the reduction in pool

Table 36

REDUCED PROJECT ALTERNATIVE

	Size, Capacity, or Feature						
Project Component/Feature	Proposed Project	Reduced Project Alternative	Net Change				
Camp Capacity	1,048	629	-419				
Fort Dormitory Beds	248	149	-99				
Tent Camp Site Capacity	800	480	-320				
Tent Camp Sites	340	204	-136				
Fire Circles	50	30	-20				
Large Amphitheater Seats	1,000	600	-400				
Western-Style Amphitheater Seats	300	180	-120				
Pool Capacity	300	180	-120				
Parking Spaces	491	295	-196				
Gun Range	Outdoor/Open Air	Enclosed	0				

Note: All other project components under the Reduced Project Alternative would be the same as the proposed project.

capacity and parking areas. As previously mentioned, it is estimated that there are approximately 6,750 trees six inches in diameter or larger, located on the project site. With the 5.2-acre reduction in site disturbance, the total number of trees estimated to be removed under this alternative would be 1,463 trees, which would be 702 fewer trees than the proposed project.

2. Impact Analysis

Aesthetics

The Reduced Project Alternative would reduce the height of some of the larger components of the project. More specifically, this alternative would reduce the number of beds at the fort building by almost 100 beds and could limit the dormitories to the first level of the fort building. By limiting the fort building to one level, the massing created by this structure would be reduced and would minimize views of the fort building along Highway 189. Similarly, the reduction in the number of parking spaces on-site (almost 200 spaces fewer than the proposed project) would likely allow for elimination of parking adjacent to Highway 189 and limit on-site parking to areas that would not be visible from Highway 189. As mentioned above, this alternative would result in the removal of 702 fewer trees than the proposed project, allowing for enhanced screening of on-site structures along Highway 189. Whereas the proposed project has parking lots and the exterior wall of the fort building highly visible to motorist traveling on Highway 189, this alternative would reduce the scale and proximity of these features while also maintaining existing trees along Highway 189 to provide some buffer between the roadway and the proposed uses. This alternative would reduce visual impacts along Highway 189 to less-

than-significant levels and, as such, visual impacts would be less than those identified for the proposed project, where visual impacts would be significant and unavoidable.

Air Quality

Under the Reduced Project Alternative, the worst-case construction day would likely utilize the same equipment and crews as the project. However, grading would be limited to 7.5 acres as opposed to 13 acres under the proposed project, resulting in a decrease of fugitive dust emissions from 16 pounds per day to approximately nine pounds per day. In addition, since less surface area would be architecturally coated, similar ROC emissions would be generated per day in a shorter time span. Similarly, the reduction in parking areas would generate the same worst-case daily ROC emissions associated with paving activities, which would be completed in a shorter time span. Therefore, construction air quality impacts would be slightly less than those identified for the proposed project.

Under the Reduced Project Alternative, certain components of the project would be reduced by approximately 40 percent. Accordingly, the operational activity would result in an approximate 40 percent reduction in emissions. As presented in Table 37 on page 226 air quality impacts during operation of the project under this alternative would be less than those identified for the proposed project.

Biological Resources

The Reduced Project Alternative would result in physical development of a slightly smaller area due to the reduction in pool area and the number of parking spaces to be removed under this alternative. Accordingly, the extent of tree removal under this alternative would be reduced by approximately 5.2 acres. As previously mentioned, the total number of trees estimated to be removed under this alternative would be 1,463 trees, which would be 702 fewer trees than the proposed project.

However, similar to the proposed project, proposed construction and related human activities associated with this alternative could impact the Federally- and State-protected threatened or endangered southern rubber boa, which may be present on-site based on the known habitat requirements of the species and the proximity to known populations. In addition, similar to the proposed project, development under the Reduced Project Alternative would directly impact CDFG jurisdictional streambed with the implementation of the camp facilities or by planned activities, such as hiking and nature walks. With the implementation of the mitigation measures identified for the proposed project, impacts to CDFG jurisdictional streams resulting from development under this alternative would also be reduced to a less-than-significant level.

Table 37

REDUCED PROJECT ALTERNATIVE VERSUS PROPOSED PROJECT PEAK DAY OPERATIONAL EMISSIONS (Pounds per Day)

Emission Source	CO	NO _x	PM_{10}	ROC	SO_x
Total Proposed Project	277	46	20	39	1
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	(273)	(9)	(130)	(16)	(149)
Total Reduced Capacity Alternative ^a	166	28	12	23	<1
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	(384)	(27)	(138)	(32)	(149)

^a Reduced Capacity Alternative Emissions are approximately 40 percent of the emissions estimated for the proposed project.

Source: PCR Services Corporation, June 2003.

As with the proposed project, impacts to the southern rubber boa would still be considered cumulatively significant after mitigation due to the loss of habitat.

Geology and Soils

Since the Reduced Project Alternative would involve a reduction in the size of some of the larger components of the project, the building footprints would slightly be less than the proposed project. The extent of site disturbance would be reduced by approximately 5.5 acres due to a reduction in tent camp sites, pool size/capacity, and parking areas. However, development of this alternative would also involve cut and fill activities throughout the project site.

This alternative would result in exposure of people on-site to a degree of seismic hazard risks similar to that of the proposed project and to developments throughout southern California. As with the proposed project, this Alternative would be constructed in accordance with UBC and County Development Code requirements and include retaining walls, berms, or other features to mitigate potential seismic hazards and potential erosion. Thus, potential impacts associated with seismic hazards under this alternative would be less than significant and would be similar to the proposed project.

Hazards and Hazardous Materials

The Reduced Project Alternative would enclose the gun range and, as such, hazards to campers within the immediate vicinity of the gun range and the potential to create soil contamination associated with the use of ammunition, which may contain lead materials, would be eliminated.

However, similar to the proposed project, the archery range would pose a potential hazard to range users and campers within the immediate vicinity of the archery range. As with the proposed project, development of the gun range and archery range would include features to create controls that would prevent a normally shot bullet from any normal range shooting position or arrows, whether prone, sitting, or standing and with assumptions as to natural ricochet and flight patterns, from exiting the ranges.

The Reduced Project Alternative would result in the exposure of fewer people and structures to potential wildland fire hazards. The project under this alternative would also involve the use of fire circles, which could increase the potential for wildland fires; however, this alternative would reduce the number of fire circles from 50 to 20, which would slightly reduce the number of potential sources for wildland fires. As with the proposed project, there is no guarantee that wildland fires would be completely prevented. Compliance with requirements established by the Crest Forest Fire Protection District and USFS would reduce potential for fire accidents and the spread of fire. Similar to the proposed project, the potential for wildland fires associated with the use of the fire rings would exist but is considered less than significant.

Hydrology, Water Quality, and Water Supply

Since the Reduced Project Alternative would involve a reduction in the size of some of the larger components of the project, the building footprints would slightly be less than the proposed project. The amount of impermeable surfaces associated with site paving would be reduced primarily due to a reduction in parking areas.

Similar to the proposed project, the impact of the project to the existing drainage pattern under this alternative would be minimal. The structures and camp facilities proposed under this alternative would not significantly impact major drainage courses. As with the proposed project, on-site surface flow would be controlled through the use of culverts to redirect surface water flows away from the proposed structures and avoid flooding of on-site structures. In addition, this alternative would be required to comply with the County's erosion control requirements and NPDES requirements during construction to ensure that impacts to hydrology and drainage would be less than significant.

As with the proposed project, the Reduced Project Alternative would be required to prepare a NOI and SWPPP to comply with the State NPDES General Construction Permit as well as to comply with RWQCB requirements regarding construction activities, including erosion control. Implementation of these requirements would reduce any potentially significant water quality impacts on receiving waters to less-than-significant levels.

Since the Reduced Project Alternative would reduce camp capacity by approximately 40 percent, it is anticipated that water usage would be reduced proportionately. As such, water usage estimated for the project under this alternative would be approximately 5.7 acre feet per year, which would be approximately 3.8 acre feet per year less than the proposed project.

Land Use

This Reduced Project Alternative would introduce the same land uses as those of the proposed project with modifications in the size and design of some of the larger project features, including the fort building, the amphitheaters, the pools, tent camp sites, and associated parking. As indicated above, the Reduced Project Alternative would reduce the visual impacts of the project to less-than-significant levels. However, noise impacts under this alternative may remain cumulatively significant and unavoidable. As a result, although there would be a reduction in conflict with land use policies aimed at protecting the character of the surroundings, the project would remain in conflict with these policies. Similarly, while the potential for incompatibility between the project and nearby existing uses would be reduced, a level of incompatibility would remain. Thus, potential land use impacts under this alternative would be less than the proposed project but would remain significant and unavoidable as they related to noise.

Noise

Under the Reduced Project Alternative, worst-case construction-period noise impacts would remain similar to impacts identified for the proposed project because the same equipment mix would be used for construction (e.g., graders, pavers, electrified and pneumatic power tools, etc.), and development would occur within the same general footprint. However, the duration of construction activities (and related noise impacts) would likely be less for this alternative than for the proposed project.

Impacts to areas immediately surrounding the project site would be less than those identified for the proposed project during operation of the camp facility. By enclosing the gun range, noise impacts from this use would be reduced to a minimum. Other recreational noise sources resulting from the proposed project, such as the two amphitheaters and outdoor swimming pools, would be significantly reduced due to their reduced capacities. As such,

impacts to areas surrounding the project site under the Reduced Project Alternative would be less than those from development of the proposed project.

However, noise from cumulative activities (i.e., Royal Rangers and Pinecrest) at sensitive receptor locations in the project vicinity may still exceed the 3-dBA incremental significance threshold for "noise-impacted" areas and the 5-dBA incremental significance threshold for areas where noise levels would not exceed the County daytime noise standards. As with the proposed project, noise from cumulative activities may remain cumulatively significant.

Since the Reduced Project Alternative would generate fewer trips than the proposed project, roadway noise impacts under this alternative would be less than those identified for the proposed project.

Transportation and Circulation

The reduction in camp capacity would reduce the number of trips generated by the project to slightly alleviate the significant traffic impacts that would be created at local intersections as a result from the proposed project. As with the proposed project, contribution to "fair-share" funding for roadway improvements within the County of San Bernardino that are consistent with the General Plan and Circulation Element would reduce impacts to local intersections to less-than-significant levels.

3. Conclusion and Relationship of the Alternative to Project Objectives

This alternative would result in reduced impacts related to most environmental issues through the reduction of the size and capacity of some of the larger components of the project, including the fort building, the amphitheaters, the pools, tent camp sites, and associated parking. Importantly, the Reduced Project Alternative would eliminate significant unavoidable impacts associated with aesthetics and views and land use. However, the Reduced Project Alternative would not fulfill the project objectives to the same degree as the proposed project.

The reduction in camp capacity may not be able to accommodate larger camp groups or camp sessions, which may result in the need to find and lease another temporary appropriate locations for those specific camp groups or camp sessions. The proposed project aims to resolve this issue by providing a permanent secure location for all of the Royal Ranger groups. Therefore, the Reduced Project Alternative is not considered desirable by the applicant because it would not fulfill the applicant's objectives to the same degree as the proposed project.

C. ALTERNATIVE 3: ALTERNATIVE SITE DESIGN

1. Description

The Alternative Site Design is intended in part to reduce the visual impacts of the proposed project by relocating project features, including the parking lots near the fort building and the cabins and structures along Highway 189, away from the roadway. This Alternative would also eliminate the fort building, the gun range, and the western-style amphitheater from the site plan. Elimination of the fort building would result in tent camping only on the project site and would allow the parking lots to be located in its place, reducing the massing created by the fort building and the parking lots and creating a larger setback between the roadway and the paved parking lots.

This alternative is estimated to reduce the extent of site disturbance by approximately 7.6 acres through elimination of the fort building, the gun range, the western-style amphitheater, and 116 spaces of parking. With the 7.6-acre reduction in site disturbance, the total number of trees to be removed under this alternative would be 1,139 trees, or 1,026 fewer trees than the proposed project.

2. Impact Analysis

Aesthetics

Elimination of the fort building would result in tent camping only on the project site and would allow the parking lots to be located in its place, reducing the massing created by the fort building and the parking lots and creating a larger setback between the roadway and the paved parking lots. Providing a larger setback along Highway 189 would minimize views of the camp structures and facilities along Highway 189. Similarly, elimination of the fort building and the western-style amphitheater would eliminate views of camp structures from public hiking trails east of the project site, as shown in Figure 12 on page 37 in Section 3.A., Aesthetics.

As mentioned above, this alternative would result in the removal of 1,026 fewer trees than the proposed project, allowing for enhanced screening of on-site structures along Highway 189 and the public hiking trails. Whereas the proposed project would result in the parking lots and the exterior wall of the fort building to be the dominating features highly visible to motorist traveling southwest on Highway 189, this alternative would eliminate those features and maintain existing trees along Highway 189 to provide some buffer between the roadway and the proposed uses. This alternative would reduce visual impacts along Highway 189 to less-than-significant levels and, as such, significant unavoidable visual impacts identified for the proposed project would not occur.

Air Quality

Under the Alternative Site Design, the worst-case construction day would likely utilize the same equipment and crews as the proposed project, resulting in the same number of haul trips. However, grading would be limited to 5.4 acres as opposed to 13 acres under the proposed project, resulting in a reduction of fugitive dust emissions from 16 pounds per day to approximately seven pounds per day. In addition, since less surface area would be architecturally coated, similar ROC emissions would be generated per day in a shorter time span. Similarly, the reduction in parking areas would generate the same worst-case daily ROC emissions associated with paving activities, which would be completed in a shorter time span. Therefore, construction air quality impacts would be slightly less than those identified for the proposed project.

Under the Alternative Site Design, certain components of the project would not be built. Accordingly, the operational activity would result in an approximate reduction of 24 percent in emissions. As presented in Table 38 on page 232, operation air quality impacts would be less than those identified for the proposed project.

Biological Resources

The Alternative Site Design would result in physical development of a slightly smaller area due to the elimination of the fort building, the western-style amphitheater, the gun range, and the number of parking spaces to be removed under this alternative. Accordingly, the extent of tree removal under this alternative would be reduced by approximately 7.6 acres. As previously mentioned, the total number of trees estimated to be removed under this alternative would be 1,139 trees, which would be 1,026 fewer trees than the proposed project.

However, similar to the proposed project, proposed construction and related human activities associated with this alternative may impact a Federally- and State-protected threatened or endangered southern rubber boa, which may be present on-site based on the known habitat requirements of the species and the proximity to known populations. In addition, similar to the proposed project, development with the Alternative Site Design would directly impact CDFG jurisdictional streambed with the implementation of the camp facilities or by planned activities, such as hiking and nature walks. With the implementation of the mitigation measures identified for the proposed project, impacts to CDFG jurisdictional streams resulting from development under this alternative would also be reduced to a less-than-significant level. As with the proposed project, impacts to the southern rubber boa would still be considered cumulatively significant after mitigation due to the loss of habitat.

Table 38

ALTERNATIVE SITE DESIGN ALTERNATIVE VERSUS PROPOSED PROJECT PEAK DAY OPERATIONAL EMISSIONS (Pounds per Day)

Emission Source	CO	NO _x	PM_{10}	ROC	SO _x
Total Proposed Project	277	46	20	39	1
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	(273)	(9)	(130)	(16)	(149)
Alternative Site Design Alternative ^a	211	35	15	30	<1
SCAQMD Significance Threshold	550	55	150	55	150
Over (Under)	(339)	(20)	(135)	(25)	(149)

^a Alternative Site Design Alternative emissions are approximately 24 percent of the emissions estimated for the proposed project.

Geology and Soils

Since the Alternative Site Design would involve the elimination of the fort building, the western-style amphitheater, the gun range, and associated parking, the building footprints would be less than the proposed project. Accordingly, the extent of site disturbance would be reduced by approximately 7.6 acres. However, development of this alternative would also involve cut and fill activities throughout the project site.

This alternative would result in exposure of people on-site to a degree of seismic hazard risks similar to that of the proposed project and to developments throughout southern California. As with the proposed project, this Alternative would be constructed in accordance with UBC and County Development Code requirements and include retaining walls, berms, or other features to mitigate potential seismic hazards and potential erosion. Thus, potential impacts associated with seismic hazards under this alternative would be less than significant and would be similar to the proposed project.

Hazards and Hazardous Materials

The Alternative Site Design would not include development of the gun range and, as such, hazards associated with this use and the potential to create soil contamination associated with the use of ammunition, which may contain lead materials, would be eliminated.

However, similar to the proposed project, the archery range would pose a potential hazard to range users and campers within the immediate vicinity of the archery range. As with the proposed project, development of the archery range would include features to create controls

that would prevent a normally shot arrows from any normal range shooting position, whether prone, sitting, or standing and with assumptions as to natural ricochet patterns, from exiting the range.

The Alternative Site Design would result in the exposure of fewer people and structures to potential wildland fire hazards. The project under this alternative would also involve the use of fire circles, which could increase the potential for wildland fires. As with the proposed project, there is no guarantee that wildland fires would be completely prevented. Compliance with requirements established by the Crest Forest Fire Protection District and USFS would reduce potential for fire accidents and the spread of fire. Similar to the proposed project, the potential for wildland fires associated with the use of the fire rings would exist but is considered less than significant.

Hydrology, Water Quality, and Water Supply

Since the Alternative Site Design would involve a reduction in the size of the project, the building footprints would be less than the proposed project. The amount of impermeable surfaces associated with site paving would be reduced primarily due to a reduction in parking areas and the elimination of the fort building, the western-style amphitheater, and gun range.

Similar to the proposed project, the impact of the project to the existing drainage pattern under this alternative would be minimal. The structures and camp facilities proposed under this alternative would not significantly impact major drainage courses. As with the proposed project, on-site surface flow would be controlled through the use of culverts to redirect surface water flows away from the proposed structures and avoid flooding of on-site structures. In addition, this alternative would be required to comply with the County's erosion control requirements and NPDES requirements during construction to ensure that impacts to hydrology and drainage would be less than significant.

As with the proposed project, the Alternative Site Design would be required to prepare a NOI and SWPPP to comply with the State NPDES General Construction Permit as well as to comply with RWQCB requirements regarding construction activities, including erosion control. Implementation of these requirements would reduce any potentially significant water quality impacts on receiving waters to less-than-significant levels.

Since the Alternative Site Design would reduce camp capacity by approximately 24 percent and limit guest accommodations to tent camping (i.e., no fort dormitories), it is anticipated that water usage would be greatly reduced. As such, water usage for the project under this alternative would be considerably less than the estimate for the proposed project.

Land Use

This Alternative Site Design would introduce generally the same land uses as those of the proposed project. However, some of the project components would be eliminated, including the fort building, the western-style amphitheater, the pools, the gun range, and associated parking. As indicated above, the Alternative Site Design would reduce the visual impacts of the project to less-than-significant levels. However, noise impacts under this alternative may remain cumulatively significant and unavoidable. As a result, although there would be a reduction in conflict with land use policies aimed at protecting the character of the surroundings, the project would remain in conflict with these policies. Similarly, while the potential for incompatibility between the project and nearby existing uses would be reduced, a level of incompatibility would remain. Thus, potential land use impacts under this alternative would be less than the proposed project and the Reduced Project Alternative but would remain significant and unavoidable as they related to noise.

Noise

Under the Alternative Site Design, worst-case construction-period noise impacts would remain similar to impacts identified for the proposed project because the same equipment mix would be used for construction (e.g., graders, pavers, electrified and pneumatic power tools, etc.), and development would generally occur within the same footprint, with the exception of those uses that would be eliminated (i.e., fort building, gun range, western-style amphitheater, and associated parking). The elimination of some of the camp uses would reduce the duration of construction activities under this alternative and would, in turn, reduce related noise impacts. As such, construction noise would be less under this alternative than for the proposed project.

Impacts to areas immediately surrounding the project site would be less under this alternative than those identified for the proposed project. Removal of the gun range would eliminate a major noise source that would trigger a significant impact on the noise environment in the project area. In addition, only one the large amphitheater would be built. As such, impacts to areas surrounding the project site under the Alternative Site Design would be less than those from development of the proposed project.

However, noise from cumulative activities (i.e., Royal Rangers and Pinecrest) at sensitive receptor locations in the project vicinity may still exceed the 3-dBA incremental significance threshold for "noise-impacted" areas and the 5-dBA incremental significance threshold for areas where noise levels would not exceed the County daytime noise standards. As with the proposed project, noise from cumulative activities may remain cumulatively significant.

Since the Alternative Site Design would generate fewer trips than the proposed project, roadway noise impacts under this alternative would be less than impacts for the proposed project.

Transportation and Circulation

The reduction in camp capacity would reduce the number of trips generated by the project to slightly alleviate the significant traffic impacts that would be created at local intersections as a result from the proposed project. As with the proposed project, contribution to "fair-share" funding for roadway improvements within the County of San Bernardino that are consistent with the General Plan and Circulation Element would reduce impacts to local intersections to less-than-significant levels.

3. Conclusion and Relationship of the Alternative to Project Objectives

This alternative would result in reduced impacts related to most environmental issues, elimination of the fort building, the western-style amphitheater, the gun range, and associated parking and the reduction of the camp capacity. Similar to the Reduced Project Alternative, the Alternative Site Design would eliminate significant unavoidable impacts associated with aesthetics/views and land use. Furthermore, the magnitude of impacts overall would be reduced compared to the proposed project and the Reduced Project Alternative. The Alternative Site Design would not fulfill the project objectives to the same degree as the proposed project or the Reduced Project Alternative. Most specifically, the project objective of providing a museum and nature center within the fort to assist camp leaders in educating the campers about the mountain environment would not be met, and a primary site feature would be eliminated.

In addition, the reduction in camp capacity might not be able to accommodate larger camp groups or camp sessions, which may result in the need to find and lease another temporary appropriate location for those specific camp groups or camp sessions. The proposed project aims to resolve this issue by providing a permanent secure location for all of the Royal Ranger groups. Therefore, the Alternative Site Design is not considered desirable by the applicant because it would not fulfill all of the applicant's objectives to the same degree as the proposed project.

D. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 15126(d) of the CEQA Guidelines indicates that an analysis of alternatives to the proposed project shall identify one alternative to the project as the environmentally superior alternative.

Table 39 on page 237 provides a summary comparison of the impacts of the various project alternatives. The No Project Alternative under the primary assumption that the project site would not be developed would involve no change to the environment and is, therefore, considered environmentally superior overall. However, this alternative fails to achieve the applicant's objectives. This alternative would not preclude future development of the site with other camp facilities or residential development project. Should residential uses that are allowable under existing land use policies be developed on-site, this development would result in greater impacts to air quality and transportation than those identified for the proposed project. Similarly, development of allowable residential uses would not achieve any of the applicant's project objectives.

Section 15126(d) of the CEQA Guidelines also states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify the environmentally superior alternative from among the other alternatives.

As such, the Alternative Site Design would be the environmentally superior alternative. This alternative would reduce impacts on aesthetics, air quality, tree removal, impermeable surfaces, hazards and soil contamination associated with the gun range, water usage, noise, and transportation to a greater extent than the Reduced Project Alternative and the proposed project. The rest of the impacts would be similar to the proposed project.

Table 39

COMPARISON OF ALTERNATIVES

Issue	No Project Alternative	Reduced Project Alternative	Alternative Site Design
Aesthetics	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project
Air Quality	Less/Greater Impacts than the Proposed Project	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project
Biological Resources	Less Than/Similar Impacts to the Proposed Project	Similar/Less Impacts than the Proposed Project	Similar/Less Impacts than the Proposed Project
Geology and Soils	Less Than/Similar Impacts to the Proposed Project	Similar/Less Impacts than the Proposed Project	Similar/Less Impacts than the Proposed Project
Hazards and Hazardous Materials	Less Impacts than the Proposed Project	Similar/Less Impacts than the Proposed Project	Similar/Less Impacts than the Proposed Project
Hydrology, Water Quality, and Water Supply	Less Than/Similar Impacts to the Proposed Project	Similar/Less Impacts than the Proposed Project	Similar/Less Impacts than the Proposed Project
Land Use	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project
Noise	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project
Transportation and Circulation	Less/Greater Impacts than the Proposed Project	Less Impacts than the Proposed Project	Less Impacts than the Proposed Project

5.0 OTHER CEQA CONSIDERATIONS

A. SIGNIFICANT UNAVOIDABLE IMPACTS

CEQA Guidelines § 15126.2(b) requires that an EIR describe significant environmental impacts that cannot be avoided, including those effects that can be mitigated but not reduced to a less-than-significant level. Following is a summary of the impacts that were concluded to be significant and unavoidable. These impacts are also described in detail in Chapter 3.0, Environmental Setting, Impacts, and Mitigation Measures, of this Draft EIR.

1. Aesthetics

The proposed project would have significant impacts to views and aesthetics. The mitigation measures identified in Section 3.A., Aesthetics, would provide additional screening of the project components located along Highway 189, including the fort building, parking lots, and staff cabins and would ensure that the project plan/design is reviewed relative to colors, materials, setbacks, and building heights. However, because of the change in views from forested undisturbed land to a developed camp facility, where the fort building, parking lots, and other structures near the entrance of the project site and along Highway 189 would remain highly visible, impacts would not be reduced to less-than-significant levels by the mitigation measures identified in Section 3.A., Aesthetics. As such, a significant unavoidable impact on views and aesthetics would occur along Highway 189.

2. Biological Resources

Although the southern rubber boa was not observed during field reconnaissance, this species has the potential to utilize resources at the site for foraging. This is a State-listed threatened species that is an uncommon resident in montane conifer communities. It could potentially utilize suitable habitat within the site for refugia, which includes but is not limited to, the two rock piles and surrounding areas with a well-developed duff layer. Based on the known habitat requirements of the species and the proximity to known populations, this species may be present on-site and may be impacted by proposed construction and related human activities. Therefore, impacts to this sensitive species are considered significant. After mitigation, impacts to the southern rubber boa would remain cumulatively significant due to the loss of habitat on the site combined with habitat loss associated with other related projects.

3. Noise

Short-term construction noise levels during maximum construction activities could increase ambient noise levels by 22 dBA at the cabins west of the project site and by 16 dBA at the Pinecrest Christian Conference Center site, and at the nearest homes in the Strawberry Flat area. Even with incorporation of mitigation measures, construction noise levels would exceed the 5-dBA incremental threshold, resulting in a short-term significant unavoidable impact.

In addition, cumulative noise from the combined use of the amphitheaters at Royal Rangers and Pinecrest Christian Conference Center would exceed the 5-dBA significance threshold for areas that are not classified as "noise-impacted" after mitigation. As such, cumulative noise would be considered significant and unavoidable.

4. Land Use

The proposed project would conflict with relevant plans and policies designed to protect the character of the area as the project would have significant unavoidable impacts to aesthetics and noise. The surrounding area also includes cabins within a quarter mile to the west of the site and residential communities within a half-mile of the site to the north, east and west. Due to the anticipated changes in noise conditions associated with the project, there would be a land use conflict between the project and nearby residential uses along the Southwest boundary of the site and to the northeast in the Strawberry Flats Area. Correspondingly, since visual/aesthetic and noise impacts cannot be mitigated to less-than-significant levels, land use impacts pertaining to land use compatibility and consistency with relevant plans and policies would be considered significant and unavoidable.

B. REASONS WHY THE PROJECT IS BEING PROPOSED, NOTWITHSTANDING SIGNIFICANT UNAVOIDABLE IMPACTS

In addition to identification of the project's significant unavoidable impacts, CEQA Guidelines § 15126.2(b) also requires that the reasons why the project is being proposed, notwithstanding these impacts, be described. The reasons why this particular project has been proposed are grounded in a comprehensive listing of project objectives included in Chapter 2.0, Project Description, of this Draft EIR. In general, the objective of the proposed project is to provide a secure location for an outdoor/mountain camping experience for Royal Ranger groups in a location that includes activity areas and amenities at the campground for learning, training, and spiritual and physical development of young boys to young men.

C. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines § 15126.2(c) indicates that "[u]ses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."

The project would necessarily consume limited, slowly renewable and non-renewable resources. This consumption would occur during the construction phase of the project and would continue throughout its operational lifetime. The proposed development would require a commitment of resources that would include: (1) building materials; (2) fuel and operational materials/resources; and (3) the transportation of goods and people to and from the project site. Construction of the project would require the consumption of resources that are not replenishable or which may renew so slowly as to be considered non-renewable. These resources would include the following construction supplies: certain types of lumber and other forest products; aggregate materials used in concrete and asphalt such as sand, gravel and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; and water. Fossil fuels, such as gasoline and oil, would also be consumed in the use of construction vehicles and equipment.

The resources that would be committed during operation of the project would be similar to those currently consumed within the County of San Bernardino and in the mountain communities. These would include energy resources, such as electricity and natural gas, petroleum-based fuels required for vehicle-trips, fossil fuels, and water. Fossil fuels would represent the primary energy source associated with both construction and operation of the project, and the existing, finite supplies of these natural resources would be incrementally reduced. It is noted here that increased consumption generated by the project is not significant when compared with existing energy consumption levels county-wide. Operation of the project would occur in accordance with Title 24, Part 6 of the California Code of Regulations, which sets forth conservation practices that would limit the amount of energy consumed by the project. In addition, the project would be subject to energy efficient planning and construction guidelines as set forth by the County of San Bernardino. However, the energy requirements associated with the project would, nonetheless, represent a long-term commitment of essentially non-renewable resources.

Development of the project represents an essentially irreversible commitment of the land to a particular use that would transform an undeveloped forested land to a camp facility. However, such a commitment would be justified, as organizational camps and conference centers

are allowed to be considered in any land use district and are permitted uses on the project site by Conditional Use Permit pursuant to the County Development Code.

In sum, construction and operation of the project would result in the irretrievable commitment of limited, slowly renewable, and nonrenewable resources, which would limit the availability of these particular resource quantities for future generations or for other uses during the life of the project. However, continued use of such resources would be of a relatively small scale and would be consistent with regional and local growth forecasts in the area. As such, although irreversible environmental changes would result from the project, such changes would not be considered significant.

D. GROWTH-INDUCING IMPACTS

CEQA Guidelines § 15126.2(d) requires that growth-inducing impacts of a proposed project be considered. Growth-inducing impacts are characteristics of a project that could directly or indirectly foster economic or population growth or the construction of additional housing in the area or region. According to the CEQA Guidelines, growth-inducing impacts can include impacts associated with the removal of obstacles to growth as well as the development of facilities that encourage and facilitate growth.

The proposed project would provide opportunities for youth to be introduced to church, community and nature-related activities through interaction with qualified leaders and scouting experiences. The program is similar in structure to the Cub Scouts and Boy Scouts of America, with different levels of life skills activities and achievements for different age groups. The proposed project would accommodate the Royal Rangers' programs, which would consist primarily of weekend camp sessions that would be held a maximum of 108 days per year. The proposed project would not result in economic or population growth in the Twin Peaks area. Overall, no growth-inducing impacts would occur as a result of this project.

E. POTENTIAL SECONDARY EFFECTS

CEQA Guidelines § 15126.4(a)(1)(D) requires that, "If a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed." With regard to this section of the CEQA Guidelines, the potential impacts that could result with the implementation of each mitigation measure proposed for the project were reviewed. The following provides a discussion of the

potential secondary impacts that could occur as a result of the implementation of the measures by environmental issue area.

1. Aesthetics (See Section 3.A of this Draft EIR)

The mitigation measures identified in Section 3.A of the EIR address tree replacement and provision of additional screening to minimize views of the proposed buildings and facilities. Implementation of these measures would not result in additional site disturbance and would not be expected to result in additional environmental impacts beyond those identified during project construction.

2. Air Quality (See Section 3.B of this Draft EIR)

Most of the air quality mitigation measures would be implemented during construction of the project and, thus, would be temporary in nature. Generally, the mitigation measures would limit the hours of operation of construction equipment and the quantity of VOC in paint materials. No significant impacts would result from implementation of these measures. In addition, the mitigation measures identified for project operation limits outdoor activities during peak ozone periods and smog alerts, which would not result in physical changes to the environment and, as such, would not result in secondary impacts.

3. Biological Resources (See Section 3.C of this Draft EIR)

The mitigation measures identified in Section 3.C of the EIR require off-site mitigation for impacts to the southern rubber boa and CDFG jurisdictional areas. Implementation of these measures involves habitat enhancement and possible relocation of threatened species, which are not expected to result in significant secondary environmental impacts.

4. Geology and Soils (See Section 3.D of this Draft EIR)

No significant impacts would result from implementation of the mitigation measures contained in the Geology and Soils Section, as the measures require the incorporation and implementation of the recommendations provided in the geotechnical investigation report prepared for the project. These measures would ensure that no impacts related to grading activities, slope stability, and collapsible and settlement-prone soils would occur, and would not result in any secondary impacts.

5. Hydrology, Water Quality, and Water Supply (See Section 3.F of this Draft EIR)

Mitigation Measure MM-F4 identifies the need for the project to fund a fair share cost toward construction of a new 750,000-gallon water storage tank immediately adjacent to the site and CVWD's existing 254,000-gallon water tank, which is located east of the proposed fort building. Installation of the 750,000-gallon water storage tank on a 4.1-acre site owned by CVWD would result in physical changes to the environment. The 4.1-acre site is improved with the existing 254,000-gallon water tank and unpaved fire roads with remaining areas consisting of undeveloped coniferous forest. CVWD anticipates that the proposed tank would be approximately 72 feet in diameter and 26 feet in height. Site preparation would likely include tree removal, grading, and minor excavation to ensure the site is cleared and leveled evenly to accommodate the water storage tank safely and securely. The discussions under the following headings evaluate potential effects associated with construction of the water storage tank required by Mitigation Measure MM-F4. The proposed water storage tank will be subject to further and separate environmental review by CVWD as more specific plans are developed.

a. Aesthetics

Due to the size and the need for tree removal to accommodate the transport and installation of the water storage tank, this structure may be visible from several hiking trails on USFS property. However, because of the elevation and the forested nature areas surrounding the water tank site, the 26-foot tall water storage tank is not anticipated to be visible from other vantage points, including Highway 189, Highway 18, residence properties, and the project site. It is expected that final plans for the water tank would reduce the significance of the impacts to a less-than-significant level. CVWD tank plans generally include tree plantings to screen views and/or painting the tank with color(s) to blend in with the natural environment.

b. Air Quality

Air pollutant emissions would be generated during site preparation and installation of the water storage tank and necessary connection pipeline. This would occur prior to the start of any construction activities on the project site. Maximum daily construction emissions associated with site preparation, tank installation, and necessary connections are anticipated to be a small percentage of those emissions estimated for the construction of the proposed project. As shown in Table 11 on page 58, since construction activities would be limited to a small area within CVWD's 4.1-acre site, would be short-term in duration, and would not need as many pieces of equipment as assumed for construction of the proposed project, daily construction emissions associated with the tank installation and connections are not expected to exceed the SCAQMD daily significance thresholds and, as such, are considered to be less than significant.

Similarly, operation of the water tank would generate minor pollutant emissions from mobile and stationary sources. Mobile sources would be limited to the trips generated by CVWD personnel for periodic maintenance and inspection of the water storage tank (i.e., one trip per day), and stationary emissions would be limited to those resulting from electrical energy demand necessary for the mechanical operation of the water tank (e.g., pumps, monitoring devices, etc.). Therefore, daily emissions associated with the operation of the water tank installation are not expected to exceed the SCAQMD daily significance thresholds and, as such, are considered to be less than significant.

c. Biological Resources

Similar to the proposed project, installation of the off-site 750,000-gallon water storage tank immediately east of the fort building would require removal of some trees with a diameter of at least six inches and some common plant species present in the project area. As determined for the proposed project, due to the fairly widespread distribution of these trees and plant species throughout the region, their removal is not expected to be significant. Temporary impacts to wildlife habitat and movement would occur during site preparation and tank installation activities. However, since the 4.1-acre CVWD site is partially developed and is a small area relative to the overall Strawberry Creek wildlife corridor, these impacts are not anticipated to significantly affect regional wildlife movement. Although a survey of the CVWD site conducted 13 to 15 years ago did not identify significant habitat or the existence of any sensitive species, it is possible that rock piles, log piles, and duff layer on the CVWD site may presently serve as southern rubber boa habitat. If this is the case based on a site survey, evaluation of more specific plans, environmental review for the water storage tank project, consultation with CDFG, and an off-site mitigation plan may be necessary to reduce any such impacts to a less-than-significant level.

d. Geology and Soils

A design-level geotechnical investigation would be required for the tank site to ensure that the water storage tank would avoid significant damage resulting from strong seismic ground shaking and be installed safely and securely with proper structural foundation and support. Adherence to applicable standard engineering practices for the tank installation and necessary connections would ensure that significant geotechnical impacts would not occur.

e. Hazards and Hazardous Materials

Installation of the water storage tank could involve the use of hazardous materials or result in the release of potentially hazardous materials during construction activities. However, CVWD and its contractor would be required to handle hazardous materials in accordance with

applicable regulations and manufacturers' instructions, which would reduce the potential for incidents related to hazards and hazardous materials. As such, no significant impacts related to hazards and hazardous materials would result from implementation of Mitigation Measure MM-F4.

f. Hydrology, Water Quality, and Water Supply

Installation of the water storage tank would involve construction activities and ground disturbance on approximately one-tenth of an acre of the 4.1-acre tank site. Similar to the proposed project, this increase in impervious surface in the project area would have a negligible impact to the overall peak flows. In addition, implementation of standard conditions of grading permit approval, such as proper grading techniques, appropriate sloping of the tank site, sand bagging, drainage swales, and regular watering of disturbed areas, would effectively control sediment transport into the area's drainage system during construction activities. As such, no significant impacts to existing drainage pattern and water quality would result from implementation of Mitigation Measure MM-F4.

The addition of the water tank would increase water storage to support adequate service for the proposed project and the surrounding area. This would be a beneficial effect resulting from implementation of Mitigation Measure MM-F4.

g. Land Use

Installation of an additional off-site water tank immediately adjacent to the existing off-site 254,000-gallon tank has been included in CVWD's UWMP to handle future water storage demand in CVWD's Pinecrest Pressure Zone. There are no sensitive receptors, including residences and other habitable structures, located with the immediate vicinity of the tank site. As such, implementation of Mitigation Measure MM-F4 would be consistent with the uses planned for CVWD's 4.1-acre site without resulting in any adjacency issues associated with construction and operation of the new water storage tank. Thus, no significant impacts to land use would occur.

h. Noise

Construction noise would be generated during site preparation and installation of the water storage tank and necessary connection pipeline. Maximum noise levels associated with site preparation and installation activities may exceed ambient noise levels by 5 dBA, which would result in a significant noise impact. However, since construction activities would be limited to a small area within CVWD's 4.1-acre site, would be short-term in duration, and would not need as many pieces of equipment as assumed for construction of the proposed project,

implementation of similar mitigation measures proposed for the project may reduce noise levels to a less-than-significant level. Construction noise would be a temporary and periodic condition, which would occur for an approximately two-week duration.

Operation of the water storage tank would require the use of a pump, which may generate noise levels in exceedance of the 5-dBA, L_{eq} threshold of significance for areas that are not designated as "noise impacted." An enclosure would be provided to house this pump and reduce noise levels below the threshold of significance. The closest sensitive receptor to the water tank site is located over 1,000 feet away in the Strawberry Flat area. In addition, operation of the water storage tank would result in a limited number of trips generated by CVWD personnel for periodic maintenance and inspection of the water storage tank. These trips are not anticipated to result in noise increases in the project area. As such, no significant operational noise impacts would result from implementation of Mitigation Measure MM-F4.

i. Transportation and Circulation

As previously mentioned, operation of the water storage tank would result in a limited number of trips generated by CVWD personnel for periodic maintenance and inspection of the water storage tank. These trips are not anticipated to affect traffic and circulation in the project area. As such, no significant impacts to transportation and circulation would result from implementation of Mitigation Measure MM-F4.

6. Hazards and Hazardous Materials (See Section 3.E of this Draft EIR)

No significant impacts would result from the implementation of the mitigation measures contained in Section 3.E of the EIR. These measures consist of procedural actions to minimize the potential for wildland fires associated with the use of the fire circles and the potential for lead contamination associated with spent ammunition and cleaning solvents. These measures would not result in physical changes to the environment and, as such, would not result in secondary impacts.

7. Noise (See Section 3.H of this Draft EIR)

No significant impacts would result from the implementation of the mitigation measures contained in Section 3.H of the EIR. Because these measures represent ministerial actions and would not result in physical changes to the environment, none would result in significant secondary impacts.

8. Transportation and Circulation (See Section IV.I of this Draft EIR)

Installation of traffic signals would require minor construction to put up the necessary equipment at impacted intersections. Installation of these signals would occur for a very short period of time, and associated impacts, such as construction air and noise emissions, would be temporary in nature. No other physical changes to the environment would occur and, as such, installation of the traffic signals would not result in any significant secondary environmental effects.

9. Conclusion

In conclusion, each of the mitigation measures contained in the Draft EIR has been considered to determine if significant secondary effects would result from the implementation of the measures. As indicated above, implementation of the proposed mitigation measures would not result in any significant secondary environmental effects, with the exception of Mitigation Measure MM-F4, which addresses the installation of an off-site water storage tank to provide additional water storage to the Pinecrest Pressure Zone. As discussed above, potential secondary effects regarding construction noise may result from implementation of this water storage mitigation. This would be a temporary condition, which would occur for an approximately two-week duration.

F. EFFECTS NOT FOUND TO BE SIGNIFICANT

In accordance with CEQA Guidelines § 15128, an EIR shall contain a statement briefly indicating the reasons that certain effects of the project were determined not to be significant and were therefore not discussed in detail in the Draft EIR. The Initial Study that was prepared for the project, which is included as Appendix A of this Draft EIR, contains a detailed discussion of the potential environmental impact areas and the reasons that each topical area was or was not analyzed further in the EIR. The potential environmental areas for which effects were not found to be significant include the following:

- Agricultural Resources;
- Cultural Resources:
- Mineral Resources;
- Population and Housing;
- Public Services;
- Recreation; and
- Utilities and Service Systems (with the exception of Water Usage, which is addressed in Section 3.F, Hydrology, Water Quality, and Water Supply).

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